Site Planning
Civil Engineering
Landscape Architecture
Land Surveying
Transportation Engineering

Environmental Studies
Entitlements
Construction Services
3D Visualization
Laser Scanning

January 12, 2023

Honorable Chairman Carthy and
Members of the Planning Board
Town of North Castle
15 Bedford Road
Armonk, New York 10504

RE: JMC Project 20044
4 Tripp Lane Zoning Compliance
4 Tripp Lane
Town of North Castle, New York

Response to Kellard Sessions and Town of North Castle Planning Department Comments

Chairman Carthy and Members of the Planning Board:

This letter has been prepared to address comments in correspondence received from Kellard Sessions, dated November 22, 2022, and the Town's Planning Department staff report dated, October 13, 2022.

To assist in your review of the revised documents, we are pleased to provide the following, which restates the comments from the above referenced memorandums, followed by our responses:

Kellard Sessions Memorandum to the Town of North Castle Planning Board, dated November 22, 2022:

General Comments

The comments below reflect the original review comments from the October 9, 2020, memorandum and the revised comments are outlined below in bold.

Comment No. 1

The applicant has provided a Gross Land Coverage Plan to demonstrate compliance with the maximum permitted gross land coverage for the zoning district. The plan indicates the removal of an existing sport court and a portion of the existing drive, both completed without permits, to reduce the land coverage, as necessary, to comply. We note, however, that the plan appears to require the addition of two areas of existing coverage, currently not accounted for; (1) the northernmost portion of the Boulder wall along the eastern property line appears to exceed 4 feet in height, and (2) the plan makes reference to a concrete patio north of the shed building. Although not shown on the plan, based on review of available Westchester County aerial mapping, the patio appears to exist. The plan shall be revised to include these additional coverage areas and the calculations adjusted accordingly so a determination can be made as to whether the total allowable coverage has been exceeded.

It is noted that the applicant has included all portions of the boulder wall greater than four (4) feet in height into the coverage calculations. Additionally, the applicant has provided photo of the previously existing concrete patio north of the existing shed. The square footage of the existing shed should be provided to determine if it will be considered an accessory structure for zoning compliance.

Response No. 1

The vinyl shed is approximately 170 square feet. The side yard setback for a principal building is 20 feet, therefore the setback for the shed would be 10 feet. As shown on the plans, the shed is 15 feet away from the side yard property line. A reference to the Town's code has been included below for reference.

(g) Except for stables, one-story accessory buildings, less than 800 square feet in area, may be located not nearer to any side or rear lot line than 1/2 the distance established in the foregoing schedule for principal buildings in the respective districts, but not nearer to any street than the required front yard setback distances.

Comment No. 2

The applicant will need to demonstrate to the Planning Board the levels of disturbances associated with the tree removal, filling and grading, construction of additional structures, walks, walls, patios, etc. This office will require an engineered site plan and comparative plan analysis using available historical Westchester County aerial mapping and GIS topography. This plan shall be used as the baseline to establish the various disturbances and the associated mitigation that will be required.

It is noted that the applicant has provided engineered site plans in efforts to establish a baseline plan to compare the disturbances that have occurred to the site. Comments to the specific areas of disturbance are further addressed throughout the memo.

Response No. 2

All comments regarding the specific areas of disturbance will be addressed later in the comment response letter.

Comment No. 3

The applicant shall provide floor plans and elevations for the proposed additions to the existing residence, the pool cabana, and the shed. The plans shall clarify whether any services or utilities including water, sewer and electric are provided at the cabana and / or the shed.

It is indicated on the plans that the proposed cabana has a BBQ/kitchen area. Please revisit the plans to include any services or utilities provided for these improvements.

Response No. 3

A site investigation was performed by JMC on December 20, 2022, and the photos that were taken

during this investigation have been included with this submission on JMC Drawing P-1. There appears to be no water or gas service to the BBQ area as there are no sinks and a portable propane grill appears to be what is used to BBQ in this area. Outlets to accommodate electric services were identified but no wiring was seen going to these outlets. The string lights seem to get power from outlets associated with the pool equipment via an extension cord.

Comment No. 4

The applicant will be required to provide confirmation from the Westchester County Health Department (WCHD) that the improvements and expansions to the residence and cabana do not require upgrades or modifications to the on-site wastewater treatment system.

It is noted that the applicant has begun discussions with the WCHD and that all correspondence will be provided to this office for review.

Response No. 4

All correspondence will be provided to Kellard Sessions upon receipt.

Comment No. 5

The plan shall illustrate and dimension all minimum required yard setbacks.

The applicant has provided zoning setback dimensions on plans. Additionally, the applicant shall provide a Bulk Zoning Table and list any variances that may be required for the accessory structures.

Response No. 5

The Table of Land Use (Bulk Zoning Table) shown on JMC drawing C-000 has been updated to outline all variances to the Town's Code that will be required because of the work performed.

Comment No. 6

As part of an ongoing application with the adjacent property to the east, it was discovered that a locally regulated wetland exists at the rear of the site. The applicant will be required to investigate this wetland system to identify the boundary and associated 100 foot wetland buffer. Based on review of available Westchester County aerial mapping, it appears that this system is potentially connected to or continues through the subject property (prior to placement of fill) to a system on the west side of the property. The wetland boundary shall be field located and established with sequentially number flags for confirmation by the Town Wetland Consultant. Prior disturbances are likely to have occurred within the regulated buffer. If so, a local Wetland Permit will be required, and the applicant will be required to prepare a wetland mitigation plan in accordance with Chapter340, Wetlands and Watercourse Protection of the Town Code. The plan will require referral to the Conservation Board for recommendation of approval. Please notify this office once the wetland boundary has been established in the field.

The applicant shall indicate all site and neighboring wetlands and watercourses on the pre-

existing conditions plan.

Response No. 6

Survey information was obtained from the Town of North Castle's Planning Board website that included the extents of the town regulated wetland located on the adjacent property. This was the only information available as there is no historical information on this town regulated wetland. This wetland was delineated on April 18, 2022, by Ecological Solutions, LLC. The wetland buffer and the approximate amount of previous disturbance within this buffer are now shown on JMC Drawing C-110.

JMC met with a representative from Kellard Sessions on December 20, 2022, on site to investigate any potential wetlands and if a wetland mitigation plan would need to be prepared to mitigate the disturbances to either the wetland or wetland buffer area. It was determined that the wetlands in question were limited to the adjacent 2 Tripp Lane property and that there was in fact work performed within this wetland's buffer area at a total of 7,775 sf as shown on JMC drawing C-110.

Comment No. 7

The Wetland Mitigation Plan, if necessary, shall illustrate and quantifying the previous disturbance areas to the wetland and/or wetland buffer. The plan shall include a summary table that quantifies the total wetland and wetland buffer area on site, total disturbance areas within each, and total pervious and impervious cover pre and post development. Mitigation shall be provided at a ratio of 2:1 minimum.

As previously mentioned, the applicant shall indicate all site and neighboring wetlands and watercourses on the pre-existing conditions plan. The plan currently indicates approximately 7,775 sf of disturbance within the wetland buffer. The applicant shall provide an updated wetland/wetland buffer disturbance area and required 2:1 mitigation based on the updated wetland delineation and available aerial mapping. The plan shall include a detailed mitigation table quantifying disturbances and land cover (pervious/impervious) within the wetland and wetland buffer and the mitigation provided.

Response No. 7

It is understood by the client that both wetland mitigation and tree removal mitigation will be required. An area totaling approximately 15,550 sf was identified as the wetland buffer disturbance mitigation area and is located in the back portion of the property where the majority of the trees that were removed were once located. The mitigation area includes tree replacement that includes shade trees at 3" caliper, understory and flowering trees at 8' – 10' height, and sapling trees planted with a meadow mix within this mitigation area. The applicant is also proposing to remove the Japanese barberry and invasive species within the remaining wetland buffer area. See response in Comment No. 8 for additional information.

Comment No. 8

The applicant has cleared a significant number of trees on the property. The quantity, size and species are not known. As required by Chapter 308, Trees of the Town Code, the applicant will be

required to provide a tree restoration plan to mitigate the unapproved removal of existing vegetation. The Planning Board will need to determine whether the restoration plan is ultimately appropriate for the level of disturbance.

It is noted that the applicant has used a neighboring property to establish a tree sample area to base the tree mitigation calculations for the previous removal of all regulated trees. It is noted that the applicant is identifying all trees greater than eight (8) inches in diameter and all trees greater than 24 inches in diameter from the 5,000 s.f. tree sample area. The applicant has proposed tree mitigation for consideration by the Planning Board.

The applicant shall use the information gathered from the tree sample area and prorate the mitigation based on a comparison of caliper inches removed versus caliper inches provided. Please update the tree mitigation calculations as needed.

Response No. 8

A sample area of an adjacent 5,000 s.f. was completed by JMC and established that there might have been approximately 1,200 inches of trees removed from the applicant's site based on this field data. We would also like to point out that there may have been invasive species such as Norway Maples that should not be counted towards the replacement value.

The standard tree planted is generally 3" in caliper. Trying to reach the 1,200-inch replacement value would necessitate the applicant installing (400) trees. The site physically could not accommodate that many trees. The applicant is proposing the following measures for mitigation:

1) Installation of (29) 3" caliper native shade trees = 87 caliper inches
2) Installation of (23) 8' – 10' native understory and flowering trees @ approx. 1.5 caliper = 34.5 caliper inches
3) Installation of (50) tubelings (native canopy and understory mix of trees TBD) approx. ½ Cal. Inches each = 25 caliper inches

This would total approximately 146.5 caliper inches which is short of the 400 caliper inches for mitigation. However, it is important to note that the applicant has proposed the concentration of the plantings in the wetland buffer area, combined with the 16,000 s.f. of wetland meadow proposed in this buffer along with the invasive species removal in the buffer area. We believe that this combined approach would serve to better align with the spirit of the mitigation and environmental improvements, instead of just a numeric approach of meeting caliper inches of tree replacement.

We have attached the Landscape Mitigation Plan for your consideration.

Comment No. 9

The applicant imported an unknown quantity of fill to regrade the rear yard. The baseline plan noted in Comment #2 above will be used as the basis for determination of the approximate quantity of fill imported to the site. The applicant shall prepare a cut/fill calculation and will be required to demonstrate compliance with Chapter 161, Filling and Grading of the Town Code, specifically as a relates to the soil source, import quantity and compliance with 6 NYCRR part 360. At a minimum, the applicant will be required to provide certification that the soil meets the Unrestricted Soil Use Group

for residential sites. The applicant will be required to complete soil sampling and testing in accordance with New York State Department of Environmental Conservation (NYSDEC) protocol and provide a soils analysis report certified by a NYS Certified Laboratory and Soils Scientist or Engineer to demonstrate that the material imported to the site is suitable.

The applicant shall overlay the survey topography onto the GIS topography to determine the appropriate cut and fill volumes established between pre-existing conditions and existing conditions.

The fill sampling and testing was reviewed by the Town's Environmental Consultant. It was recommended that based on some of the low-level contamination present, that the fill remain in place. However, a demarcation layer (orange fence or geotextile membrane) be placed above the fill section and a minimum six (6) inch layer of topsoil be placed atop the demarcation layer to cap the material. The applicant shall review the recommendations provided in the report and revise the plans to include appropriate notes and details to include the recommendations.

Response No. 9

Detail #18 has been added to JMC Drawing C-901 to illustrate the installation of the demarcation layer.

Comment No. 10

The property is served by an on-site wastewater treatment system. The plan shall illustrate the location of the existing septic field and tanks based on available WCHD as-builts and record data. It is assumed that the imported fill material and regrading activities that occurred at the rear of the property was also placed above the existing septic field, potentially compromising its function. The applicant will be required to provide a determination, confirmed by the WCHD, that the septic system continues to operate as intended. Any upgrades or modifications that may become necessary will need to be illustrated on the plan and approved by the Westchester County Health Department.

As previously mentioned, the applicant has begun discussion with the WCDH and will forward all correspondence to this office for review. Additionally, it should be noted that if the existing septic field trenches are to remain, a plan shall be provided to protect the existing septic fields during the removal of the portion of existing asphalt driveway.

Response No. 10

The client has not yet received any correspondence from the WCDOH but as soon as anything is received, the Town will be notified.

Comment No. 11

The applicant has developed several improvements and altered the land cover characteristics for the site which has resulted in an increase in impervious surface and an associated increase in stormwater runoff. As required by Chapter 267, Stormwater Management of the Town Code, the applicant shall prepare a Stormwater Pollution Prevention Plan, inclusive of stormwater mitigation and attenuation measures, to mitigate stormwater runoff through the 100-year, 24-hour storm event.

For the purpose of the analysis, the baseline map noted above shall be used to establish pre- developed conditions and a comparative analysis to the current site conditions shall be prepared.

The applicant has provided a Stormwater Management report. The applicant shall revise said report and clarify if the existing court and portion of the existing asphalt driveway to be removed are included in the stormwater mitigation calculations, as it appears they have been included. Additionally, there are differing references to the amount of Stormtech units being provided. Please clarify and resubmit for review.

Response No. 11

The basketball court and the portion of the driveway that are both to be removed are no longer included in the stormwater calculations. The amount of Stormtech units has been coordinated between all drawings and documents.

Comment No. 12

The plan shall clearly illustrate the location of any existing drainage systems, conveyance systems and connections. Any connections that may exist, to this storm system located in Tripp Lane, will require approval by the Town Highway Department.

Comment addressed.

Response No. 12

Comment addressed.

Comment No. 13

As part of the stormwater mitigation system design, the applicant will be required to perform deep and soil percolation testing in the vicinity of any proposed stormwater mitigation practices. The soil testing shall be witnessed by the Town Engineer. Please contact this office to schedule the required soil testing.

Comment addressed.

Response No. 13

Comment addressed.

Comment No. 14

The applicant will be required to provide certification for the proper construction and stability of all retaining walls greater than or equal to 4 feet in height. Details of their construction shall be provided on the plan.

The applicant has provided a retaining wall plan and back up calculations in certifying the stability of the existing walls. It is noted that the applicant is to reconstruct a portion of the stone wall on

the east side of the property. Design and details for this construction has been provided.

Response No. 14

Comment Addressed.

Comment No. 15

The plan shall clearly illustrate and identify the various fences located throughout the site, indicating their height and material. Fence details shall be provided on the plan.

The plans call for a six (6) foot high black vinyl coated chain link fence; however, the two (2) fence details provided are for proposed fence of 5 feet 3 inches and 5 feet 2 inches. Please coordinate between the plan and details.

Additionally, the plan shall indicate a pool enclosure that complies with NYS Building Code.

Response No. 15

The fence labels shown on JMC Drawing C-110 have been coordinated with details #10 and #11 shown on JMC Drawing C-901. A fence surrounding the pool area (including a gate) is now shown on the Site Plans and a detail of the fence and gate has been included on JMC Drawing C-900 as Detail #5.

Comment No. 16

Driveway piers and a gate has been installed at the front property line. The Town requires that gates be set back a minimum of 20 feet from the right of way to permit adequate area for a vehicle to pull off the road as well as to account for potential future road widening. The piers and gate shall be relocated accordingly, and appropriate details of their construction included on the plans.

It is noted that a waiver is requested by the applicant.

Response No. 16

The client awaits a decision on the requested waiver.

Comment No. 17

The driveway curb cut is greater than 18 feet in width which is the maximum permitted by the Town Highway Department. The plan shall be revised to demonstrate compliance and include all details necessary for work and restoration within the Town Right of Way.

It is noted that a waiver is requested by the applicant.

Response No. 17

The client awaits a decision on the requested waiver.

Town of North Castle Planning Department Staff Report, dated October 13, 2022:

Procedural Comments

Comment No. 1

The Proposed Action would be classified as a Type II Action pursuant to the State Environmental Quality Review Act (SEQRA).

Response No. 1

So noted.

Comment No. 2

A neighbor notification meeting regarding the proposed amendment will need to be scheduled.

Response No. 2

The applicant will coordinate with the Planning Board regarding an appropriate time to schedule the neighbor notification meeting when the plans and all submission documents are advanced far enough.

Comment No. 3

Pursuant to Section 12-18.A of the Town Code, all site development plans submitted to the Planning Board are required to be referred to the Architectural Review Board (ARB) for review and comment.

Response No. 3

The applicant will coordinate with the Planning Board regarding an appropriate time to be referred to the ARB when the plans and all submission documents are advanced far enough.

Comment No. 4

Pursuant to Section 340-5.B of the Town Code, the Conservation Board is required to review the proposed wetland application and, within 45 days of receipt thereof, file a written report and its recommendation concerning the application with the Planning Board. Such report is required to evaluate the proposed regulated activity in terms of the findings, intent and standards of Chapter 340.

Response No. 4

The applicant has met with the Town's wetland consultant (Kellard Sessions) and the tree mitigation

plan (JMC Drawing C-130) has been updated to reflect comments and suggestions received following this meeting.

General Comments

Comment No. 1

The Applicant has determined that approximately 171 trees were removed from the site. The Applicant's cover letter indicates that the 255 arborvitae plants previously planted along the perimeter are proposed as mitigation for the previous tree removal.

Response No. 1

Please see response No. 8 which identifies tree replacement as well tree mitigation approach.

Comment No. 2

The site plan has been revised to depict the location of the Town-regulated wetland buffer. The plans should be revised to quantify the amount of disturbance within the buffer (square feet) and prepare a 2:1 mitigation plan for review.

Response No. 2

Survey information was obtained from the Town of North Castle's Planning Board website that included the extents of the town regulated wetland located on the adjacent property. This was the only information available as there is no historical information on this town regulated wetland. This wetland was delineated on April 18, 2022, by Ecological Solutions, LLC. The wetland buffer and the approximate amount of previous disturbance within this buffer are now shown on JMC Drawing C-110.

JMC met with a representative from Kellard Sessions on December 20, 2022, on site to investigate any potential wetlands and if a wetland mitigation plan would need to be prepared to mitigate the disturbances to either the wetland or wetland buffer area. It was determined that the wetlands in question were limited to the adjacent 2 Tripp Lane property and that there was in fact work performed within this wetland's buffer area at a total of 7,775 sf as shown on JMC drawing C-110. A mitigation of 15,550 sf would be required is shown on JMC Drawing C-130.

Comment No. 3

The Applicant has brought fill onto the site without the benefit of a fill permit issued by the Building Department.

Response No. 3

The applicant awaits further determination from the Planning Board about the process for legalizing the imported fill.

Comment No. 4

The driveway piers detail should be revised to dimension the base of the pier to the top of the light fixture. This dimension can't exceed 8 feet in height.

Response No. 4

Detail #12 On JMC Drawing C-901 has been updated to correctly dimension the driveway piers. A variance will be required for the height of the driveway piers.

Comment No. 5

The proposed (legalization) driveway gates are located on the property line. Driveway gates should be located a minimum of 20 feet from the front property line to permit adequate vehicular pull off from the right-of-way should Tripp Lane ever be expanded to the edge of the right-of-way.

Response No. 5

The client awaits a decision on the requested waiver.

Comment No. 6

The Applicant should submit floor plans and elevations for the proposed (legalization) shed.

Response No. 6

Floor plans and elevations have been provided for the improvements to the residence along with the Cabana. The Shed was prefabricated therefore no specification sheets, floor plans, elevations were provided to the client. A picture of the shed is now included on the Gross Land Coverage Calculation drawing.

Comment No. 7

An updated gross land coverage calculations worksheet should be submitted for review.

Response No. 7

It is the Architect's opinion that the basement and garage should not be included in the gross floor area calculations as shown on the average grade diagram on drawing A1.

Comment No. 8

The submitted gross floor area calculations worksheet does not include the floor area of the garage or basement. Garage space is required to be counted as part of gross floor area. The Applicant shall also provide an exhibit demonstrating that the basement level would be excluded pursuant to the definition of gross floor area.

Response No. 8

It is the Architect's opinion that the basement and garage should not be included in the gross floor area calculations as shown on the average grade diagram on drawing A1.

We trust that the above, along with the enclosed documents and drawings, address comments from the Town's Consultant's to further along the application to the Town's Zoning Board of Appeals. We look forward to your continued review throughout the Site Plan approval process and discussing this matter with you further. Should you have any questions or require additional information regarding the information provided above, please do not hesitate to contact our office at 914-273-5225.

Sincerely,

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC

Rick Bohlander, PE
Project Manager

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SITE DEVELOPMENT PLAN APPROVAL DRAWINGS

PEREIRA RESIDENCE

4 TRIPP LANE
TAX MAP SECTION 108.02| BLOCK 1| LOT 10
WESTCHESTER COUNTY
NORTH CASTLE, NY

Applicant / Owner:
MR. & MRS. PEREIRA
4 TRIPP LANE
TOWN OF NORTH CASTLE, NY
APPLICANT PHONE: (914) 391-6979

Architect:
GET MY C.O.
57 WHEELER AVENUE, SUITE 203
PLEASANTVILLE, NY 10570
(914) 727-0980

Surveyor:
SUMMIT LAND SURVEYING P.C.
21 DRAKE LANE
WHITE PLAINS, NY 10607
(914) 629-7758

Site Planner, Civil Engineer and Landscape Architect:
120 BEDFORD ROAD
ARMONK, NY 10504
(914) 273-5225

JMC Drawing List:

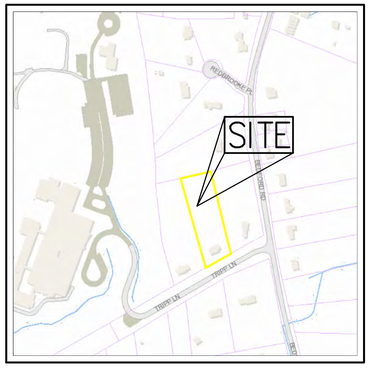
C-000 COVER SHEET
C-100 PRE-EXISTING CONDITIONS MAP
C-110 EXISTING CONDITIONS MAP AND DEMOLITION PLAN
C-130 TREE MITIGATION PLAN
C-200 SITE PLAN
C-310 GROSS LAND COVERAGE PLAN
C-410 CUT AND FILL PLAN
C-900 CONSTRUCTION DETAILS
C-901 CONSTRUCTION DETAILS

TABLE OF LAND USE

TOWN OF NORTH CASTLE, N.Y. SECTION 108.02, BLOCK 1, LOT 10
ZONE "R-2A." – "ONE FAMILY RESIDENTIAL DISTRICT" (2 ACRES)

DESCRIPTION		REQUIRED	PROVIDED
MINIMUM LOT AREA	(ACRES / S.F.)	2	±2.06/±89,820
MINIMUM LOT FRONTAGE	(FEET)	150	±183.6
MINIMUM LOT WIDTH	(FEET)	150	±175
MINIMUM LOT DEPTH	(FEET)	150	±513.3
MINIMUM YARDS			
FRONT	(FEET)	50	±55.13
SIDE	(FEET)	30	±35.17
REAR	(FEET)	50	±402.19
ACCESSORY BUILDING SIDE YARD SETBACK	(FEET)	10	15
MAXIMUM BUILDING HEIGHT	(FEET)	30	<30
MAXIMUM BUILDING COVERAGE	(PERCENT)	8	3.92
MINIMUM DWELLING UNIT SIZE (§355-70)	(S.F.)	1,400	2,786
MINIMUM DRIVEWAY PIER/GATE SETBACK FROM RIGHT-OF-WAY	(FEET)	20	±0.65 (1)
MAXIMUM DRIVEWAY CURB CUT	(FEET)	18	±24.6 (1)
MAXIMUM DRIVEWAY PIER HEIGHT	(FEET)	8	9 (1)

(1) WILL REQUIRE A VARIANCE.



ZONING / VICINITY MAP
SCALE: 1" = 400'

AREA MAP
SCALE: N.T.S.

GENERAL CONSTRUCTION NOTES APPLY TO ALL WORK HEREIN:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 "DIG SAFELY" (1-800-962-7962) TO HAVE UNDERGROUND UTILITIES LOCATED. EXPLORATORY EXCAVATIONS SHALL COMPLY WITH CODE 753 REQUIREMENTS. NO WORK SHALL COMMENCE UNTIL ALL THE OPERATORS HAVE NOTIFIED THE CONTRACTOR THAT THEIR UTILITIES HAVE BEEN LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION, INSOFAR AS THEY MAY BE ENDANGERED BY THE CONTRACTOR'S OPERATIONS. THIS SHALL HOLD TRUE WHETHER OR NOT THEY ARE SHOWN ON THE CONTRACT DRAWINGS. IF THEY ARE SHOWN ON THE DRAWINGS, THEIR LOCATIONS ARE NOT GUARANTEED EVEN THOUGH THE INFORMATION WAS OBTAINED FROM THE BEST AVAILABLE SOURCES, AND IN ANY EVENT, OTHER UTILITIES ON THESE PLANS MAY BE ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, IMMEDIATELY REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT HE DAMAGES, AND SHALL CAREFULLY PROCEED WITH CAUTION TO PREVENT UNDUE INTERRUPTION OF UTILITY SERVICE.
2. CONTRACTOR SHALL HAND DIG TEST PITS TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL VERIFY EXISTING UTILITIES DEPTHS AND ADVISE OF ANY CONFLICTS WITH PROPOSED UTILITIES. IF CONFLICTS ARE PRESENT, THE OWNER'S FIELD REPRESENTATIVE, JMC, PLLC AND THE APPLICABLE MUNICIPALITY OR AGENCY SHALL BE NOTIFIED IN WRITING. THE EXISTING/PROPOSED UTILITIES RELOCATION SHALL BE DESIGNED BY JMC, PLLC.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL LOCAL PERMITS REQUIRED.
4. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL SAFETY CODES. APPLICABLE SAFETY CODES MEAN THE LATEST EDITION INCLUDING ANY AND ALL AMENDMENTS, REVISIONS, AND ADDITIONS THERETO, TO THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA); AND APPLICABLE SAFETY, HEALTH REGULATIONS AND BUILDING CODES FOR CONSTRUCTION IN THE STATE OF NEW YORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GUARDING AND PROTECTING ALL OPEN EXCAVATIONS IN ACCORDANCE WITH THE PROVISION OF SECTION 107-05 (SAFETY AND HEALTH REQUIREMENTS) OF THE NYSDOT STANDARD SPECIFICATIONS. IF THE CONTRACTOR PERFORMS ANY HAZARDOUS CONSTRUCTION PRACTICES, ALL OPERATIONS IN THE AFFECTED AREA SHALL BE DISCONTINUED AND IMMEDIATE ACTION SHALL BE TAKEN TO CORRECT THE SITUATION TO THE SATISFACTION OF THE APPROVAL AUTHORITY HAVING JURISDICTION.
5. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AFFECTED BY THE SCOPE OF WORK SHOWN HEREON AT ALL TIMES TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE. RAMPING CONSTRUCTION TO PROVIDE ACCESS MAY BE CONSTRUCTED WITH SUBBASE MATERIAL EXCEPT THAT TEMPORARY ASPHALT CONCRETE SHALL BE PLACED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE PEDESTRIAN ACCESS AT ALL TIMES.
6. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING PAVEMENT TO REMAIN.

SUBSURFACE UTILITY LOCATIONS ARE BASED ON A COMPILATION OF FIELD EVIDENCE, AVAILABLE RECORD PLANS AND/OR UTILITY MARK-OUTS. THE LOCATION OR COMPLETENESS OF UNDERGROUND INFORMATION CANNOT BE GUARANTEED. VERIFY THE ACTUAL LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION.

811 Know what's below. Call before you dig.

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
RESOLUTION, DATED: _____

_____ DATE: _____
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

_____ DATE: _____
JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

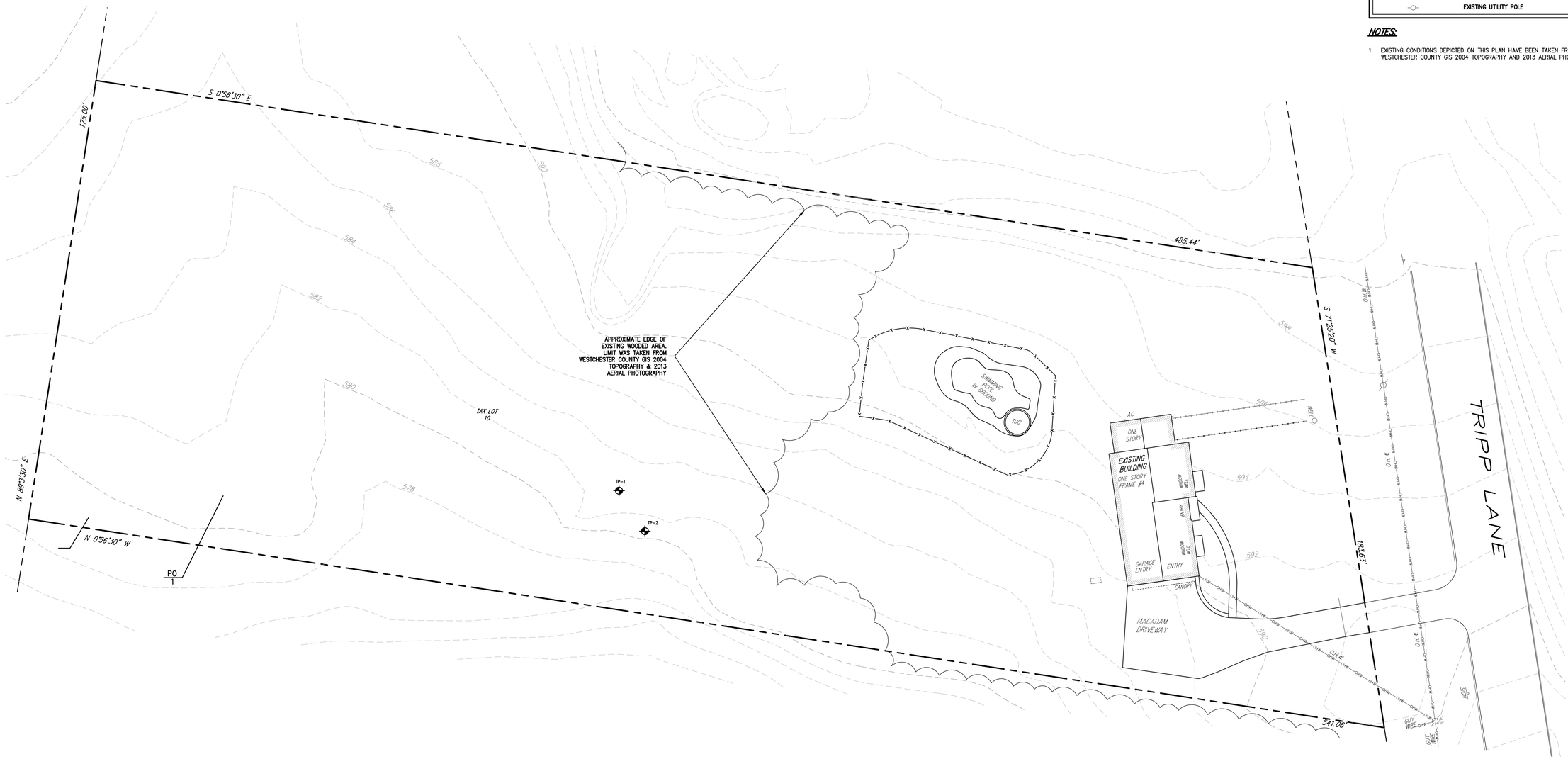
STATE OF NEW YORK · FREDERICK POHLMANN · 100532-1 · LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB
2.	PLANNING BOARD SUBMISSION	01/09/2023	RB

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

Drawn:	DK	Approved:	AN
Scale:	NOT TO SCALE		
Date:	03/01/2021		
Project No:	20044		
20044-SITE DK	COVER	COVER.scr	
Drawing No:	C-000		



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING GIS CONTOUR
- EXISTING GIS INDEX CONTOUR
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLE

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM WESTCHESTER COUNTY GIS 2004 TOPOGRAPHY AND 2013 AERIAL PHOTOGRAPHY.

APPLICANT/OWNER:
MR. & MRS. PEREIRA
4 TRIPP LANE
TOWN OF NORTH CASTLE, NY

ARCHITECT:
GET MY CO
57 WHEELER AVENUE, SUITE 203
PLEASANTVILLE, NY

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
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John Meyer Consulting, Inc.
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voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

JMC

PRE-EXISTING CONDITIONS MAP

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

NOT FOR CONSTRUCTION

GIS GEOGRAPHIC INFORMATION SYSTEMS

THE 2-FOOT CONTOURS DEPICTED ON THIS PLAN ARE INTENDED TO BE USED FOR PLANNING & PRELIMINARY ENGINEERING APPLICATIONS. THEY ARE NOT INTENDED TO BE USED IN ENGINEERING DESIGN AND DO NOT NEGATE THE NEED FOR A FIELD SURVEY. THE WESTCHESTER COUNTY GIS DATASET CONTAINS CONTOUR LINES MODELED AT A TWO FOOT INTERVAL. THE SOURCE INFORMATION USED IN THE COLLECTION OF THE DATASET WAS PART OF THE NEW YORK STATE DIGITAL ORTHOIMAGERY PROGRAM; PHOTOS TAKEN IN APRIL 2004. VERTICAL DATUM IS NAVD88.
THE COUNTY OF WESTCHESTER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE COMPLETENESS OR ACCURACY OF THE DATA AND ASSUMES NO LIABILITY WHATSOEVER FOR ANY PRODUCT OR ANALYSIS DERIVED FROM OR BASED ON THE DATA.

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
RESOLUTION, DATED: _____

_____ DATE: _____
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

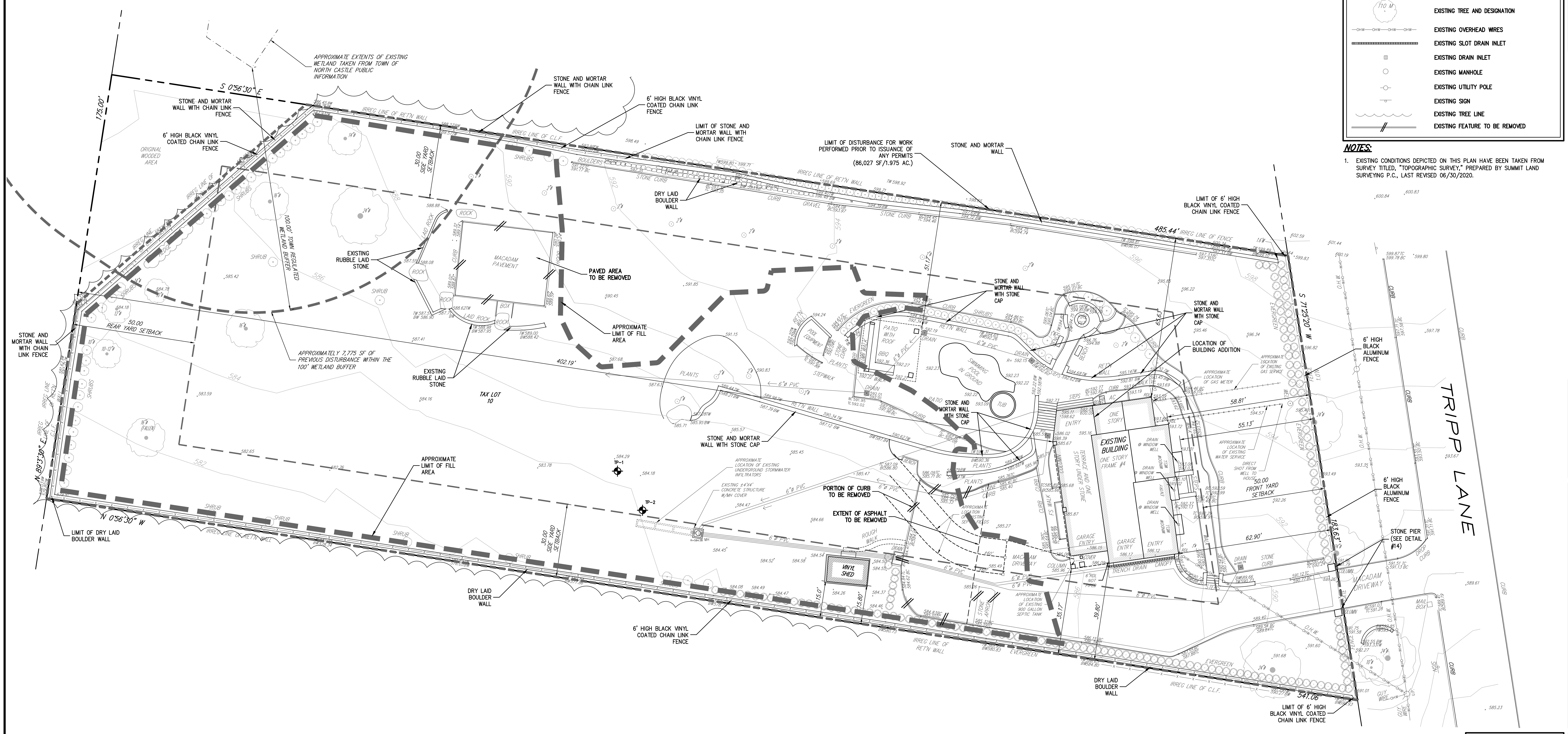
_____ DATE: _____
JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · FREDERICK BOHLINGER · 100532-1 · LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB
2.	PLANNING BOARD SUBMISSION	01/09/2023	RB
	Previous Editions Obsolete		

Drawn:	DK	Approved:	AN
Scale:	1" = 20'		
Date:	03/01/2021		
Project No:	20044		
20044-SITE DK	PRE-EXIST	PRE EX COND I.S	
Drawing No:	C-100		



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
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- EXISTING INDEX CONTOUR
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- EXISTING RETAINING WALL
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- EXISTING OVERHEAD WIRES
- EXISTING SLOT DRAIN INLET
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING TREE LINE
- EXISTING FEATURE TO BE REMOVED

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY SUMMIT LAND SURVEYING P.C., LAST REVISED 06/30/2020.

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EXISTING CONDITIONS MAP AND DEMOLITION PLAN

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
RESOLUTION, DATED: ____________

______________________________ DATE: ____________
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

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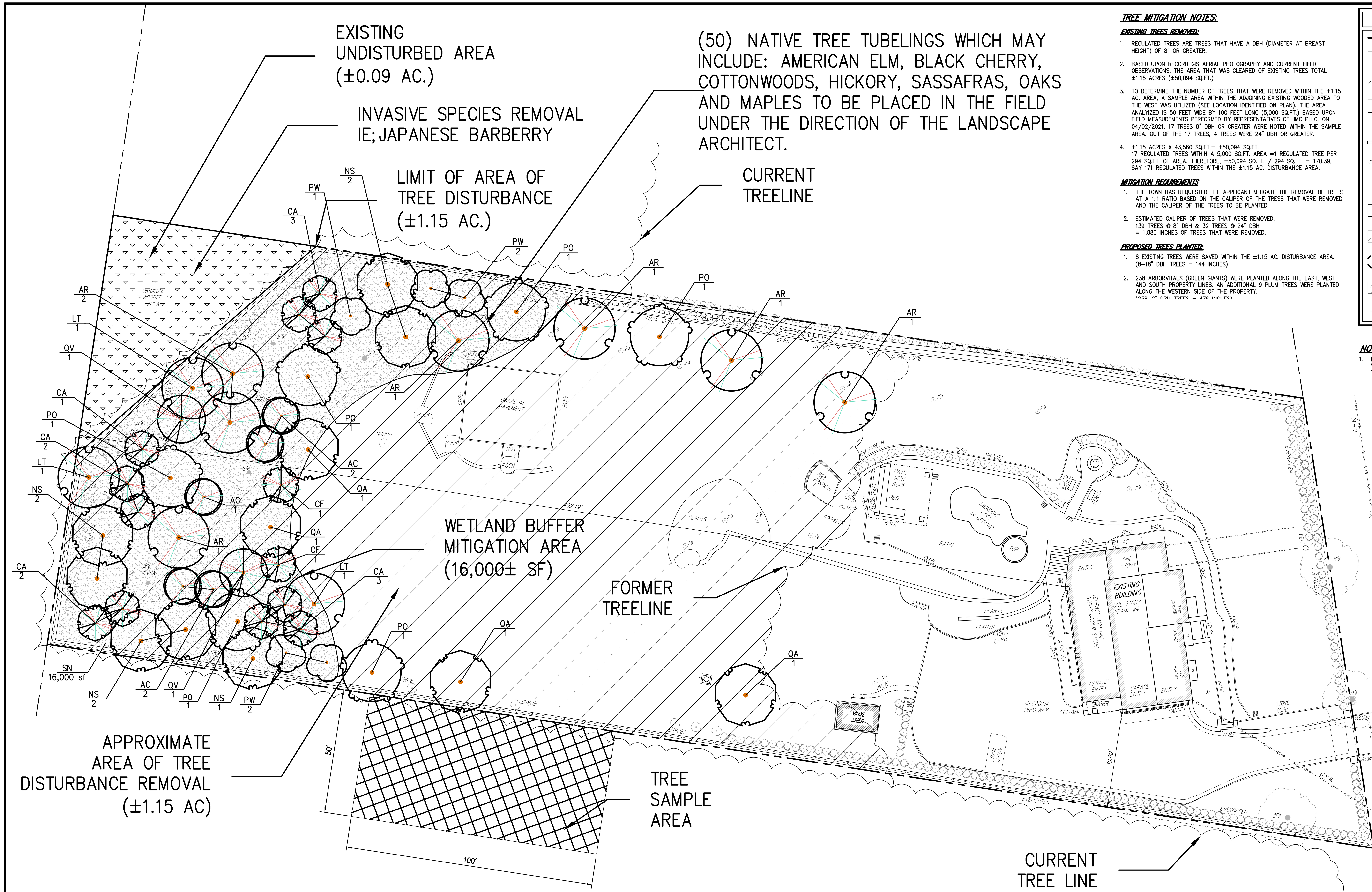
STATE OF NEW YORK
FREDERICK BOHLANDER
100532-1
LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB
2.	PLANNING BOARD SUBMISSION	01/09/2023	RB

Previous Editions Obsolete

Drawn: DK	Approved: AN
Scale:	1" = 20'
Date:	03/01/2021
Project No:	20044
20044-SITE DK	EXIST / EXIST.scr
Drawing No:	C-110

NOT FOR CONSTRUCTION



TREE MITIGATION NOTES:

EXISTING TREES REMOVED:

1. REGULATED TREES ARE TREES THAT HAVE A DBH (DIAMETER AT BREAST HEIGHT) OF 8" OR GREATER.
2. BASED UPON RECORD GIS AERIAL PHOTOGRAPHY AND CURRENT FIELD OBSERVATIONS, THE AREA THAT WAS CLEARED OF EXISTING TREES TOTAL ±1.15 ACRES (±50,094 SQ.FT.)
3. TO DETERMINE THE NUMBER OF TREES THAT WERE REMOVED WITHIN THE ±1.15 AC. AREA, A SAMPLE AREA WITHIN THE ADJOINING EXISTING WOODED AREA TO THE WEST WAS UTILIZED (SEE LOCATION IDENTIFIED ON PLAN). THE AREA ANALYIZED IS 50 FEET WIDE BY 100 FEET LONG (5,000 SQ.FT.) BASED UPON FIELD MEASUREMENTS PERFORMED BY REPRESENTATIVES OF JMC PLLC. ON 04/02/2021. 17 TREES 8" DBH OR GREATER WERE NOTED WITHIN THE SAMPLE AREA. OUT OF THE 17 TREES, 4 TREES WERE 24" DBH OR GREATER.
4. ±1.15 ACRES X 43,560 SQ.FT.= ±50,094 SQ.FT.
   17 REGULATED TREES WITHIN A 5,000 SQ.FT. AREA =1 REGULATED TREE PER 294 SQ.FT. OF AREA. THEREFORE, ±50,094 SQ.FT. / 294 SQ.FT. = 170.39, SAY 171 REGULATED TREES WITHIN THE ±1.15 AC. DISTURBANCE AREA.

MITIGATION REQUIREMENTS

1. THE TOWN HAS REQUESTED THE APPLICANT MITIGATE THE REMOVAL OF TREES AT A 1:1 RATIO BASED ON THE CALIPER OF THE TRESS THAT WERE REMOVED AND THE CALIPER OF THE TREES TO BE PLANTED.
2. ESTIMATED CALIPER OF TREES THAT WERE REMOVED:
   139 TREES @ 8" DBH & 32 TREES @ 24" DBH
   = 1,880 INCHES OF TREES THAT WERE REMOVED.

PROPOSED TREES PLANTED:

1. 8 EXISTING TREES WERE SAVED WITHIN THE ±1.15 AC. DISTURBANCE AREA. (8–18" DBH TREES = 144 INCHES)
2. 238 ARBORVITAES (GREEN GIANTS) WERE PLANTED ALONG THE EAST, WEST AND SOUTH PROPERTY LINES. AN ADDITIONAL 9 PLUM TREES WERE PLANTED ALONG THE WESTERN SIDE OF THE PROPERTY.
   (238 3" DBH TREES = 476 INCHES)

LEGEND

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- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING DRY LAID RETAINING WALL
- EXISTING RETAINING WALL
- EXISTING FENCE
- T10 M — EXISTING TREE AND DESIGNATION
- UNDISTURBED AREA OF TREES
- DISTURBED AREA OF TREES
- SAMPLE AREA OF TREES
- SEEDED AREA
- PRE-EXISTING TREE LINE

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM WESTCHESTER COUNTY GIS 2004 TOPOGRAPHY AND WESTCHESTER COUNTY GIS TIME LAPSED AERIAL PHOTOGRAPHY FROM 2013.

PLANT SCHEDULE

SHADE TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT COND.	REMARKS
AR	7	Acer rubrum 'Red Sunset'	Red Maple	3" – 3 1/2" Cal.	B & B	
LT	3	Liriodendron tulipifera	Tulip Poplar	3" – 3 1/2" CAL.	B & B	
NS	7	Nyssa sylvatica	Tupelo	3" – 3 1/2" Cal.	B & B	
PO	6	Platanus occidentalis	American Sycamore	3" – 3 1/2" Cal.	B & B	
QA	4	Quercus alba	White Oak	3" – 3 1/2" Cal.	B & B	
QV	2	Quercus velutina	Black Oak	3" – 3 1/2" Cal.	B & B	
UNDERSTORY & FLOWERING TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT COND.	REMARKS
AC	5	Amelanchier canadensis	Canadian Serviceberry	8' –10' HT.	B & B	
CA	11	Carpinus caroliniana	American Hornbeam	8' –10' HT.	B & B	
CF	2	Cornus florida	Flowering Dogwood	8' –10' HT.	B & B	
PW	5	Prunus serotina	Black Cherry	8 gal	CONT.	
SEED MIX	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT COND.	REMARKS
SN	16,000 sf	_Showy Native N.E. mix ERNMIX–153–1	ERNMIX–153–1	seed		

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
RESOLUTION, DATED: ____________

____________________ DATE: ____________
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

____________________ DATE: ____________
JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS

No.	Revision	Date	By
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB
2.	PLANNING BOARD SUBMISSION	01/09/2023	RB

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STATE OF NEW YORK · FREDERICK BOHLANDER · 100532-1 · LICENSED PROFESSIONAL ENGINEER

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TOWN OF NORTH CASTLE, NY

ARCHITECT:
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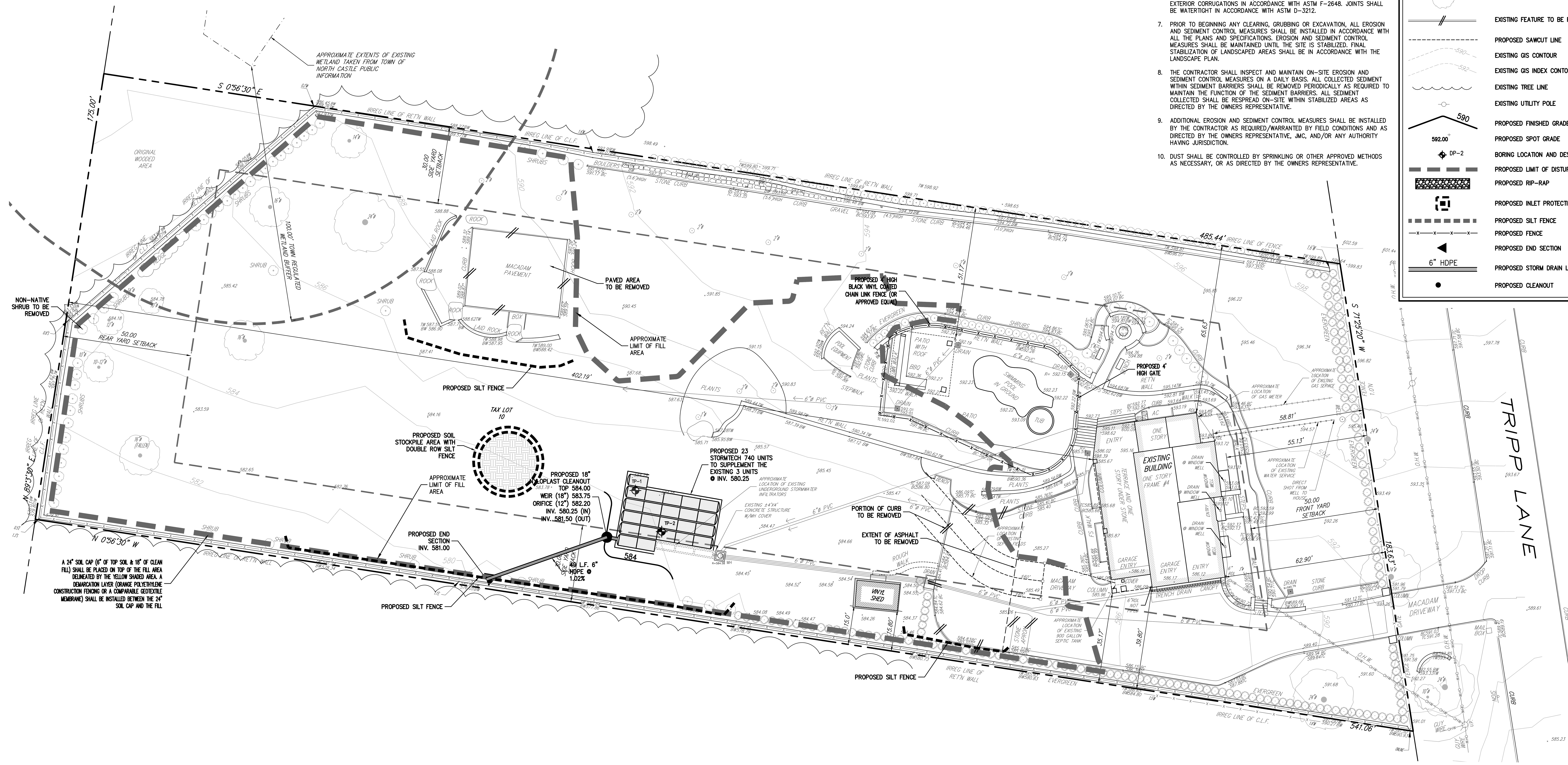
www.jmcpllc.com

TREE MITIGATION PLAN

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

Drawn: DK	Approved: AN
Scale:	1" = 20'
Date:	03/01/2021
Project No:	20044
20044-SITE DK	TREE / TREE.LS
Drawing No:	C–130



NOTES:

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2. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.
3. ALL FILLS SHALL BE COMPACTED TO PROVIDE STABILITY OF MATERIAL AND TO PREVENT SETTLEMENT.
4. EXCAVATIONS AND FILLS SHALL NOT ENDANGER ADJOINING PROPERTIES, NOR DIVERT WATER ONTO THE PROPERTY OF OTHERS AT ANY TIME DURING THE COURSE OF CONSTRUCTION.
5. CONTRACTOR SHALL REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR FURTHER DIRECTION REGARDING SITE STABILIZATION THROUGHOUT THE COURSE OF CONSTRUCTION.
6. UNLESS OTHERWISE SPECIFIED, PIPE FOR STORM DRAINS SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE) WITH A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS IN ACCORDANCE WITH ASTM F-2648. JOINTS SHALL BE WATERTIGHT IN ACCORDANCE WITH ASTM D-3212.
7. PRIOR TO BEGINNING ANY CLEARING, GRUBBING OR EXCAVATION, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH ALL THE PLANS AND SPECIFICATIONS. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED. FINAL STABILIZATION OF LANDSCAPED AREAS SHALL BE IN ACCORDANCE WITH THE LANDSCAPE PLAN.
8. THE CONTRACTOR SHALL INSPECT AND MAINTAIN ON-SITE EROSION AND SEDIMENT CONTROL MEASURES ON A DAILY BASIS. ALL COLLECTED SEDIMENT WITHIN SEDIMENT BARRIERS SHALL BE REMOVED PERIODICALLY AS REQUIRED TO MAINTAIN THE FUNCTION OF THE SEDIMENT BARRIERS. ALL SEDIMENT COLLECTED SHALL BE RESPREAD ON-SITE WITHIN STABILIZED AREAS AS DIRECTED BY THE OWNERS REPRESENTATIVE.
9. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR AS REQUIRED/WARRANTED BY FIELD CONDITIONS AND AS DIRECTED BY THE OWNERS REPRESENTATIVE, JMC, AND/OR ANY AUTHORITY HAVING JURISDICTION.
10. DUST SHALL BE CONTROLLED BY SPRINKLING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNERS REPRESENTATIVE.

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING SETBACK LINE
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING DRY LAID RETAINING WALL
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING FEATURE TO BE REMOVED
- PROPOSED SAWCUT LINE
- EXISTING GIS CONTOUR
- EXISTING GIS INDEX CONTOUR
- EXISTING TREE LINE
- EXISTING UTILITY POLE
- 590 PROPOSED FINISHED GRADE
- 592.00 PROPOSED SPOT GRADE
- DP-2 BORING LOCATION AND DESIGNATION
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED RIP-RAP
- PROPOSED INLET PROTECTION
- PROPOSED SILT FENCE
- PROPOSED FENCE
- PROPOSED END SECTION
- 6" HDPE PROPOSED STORM DRAIN LINE & SIZE
- PROPOSED CLEANOUT

APPLICANT/OWNER:
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SITE PLAN

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
RESOLUTION, DATED: ____________

______________________________ DATE: ____________
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

______________________________ DATE: ____________
JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
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STATE OF NEW YORK — FREDERICK BOHLANDER — 100532-1 — LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB
2.	PLANNING BOARD SUBMISSION	01/09/2023	RB

Previous Editions Obsolete

Drawn: DK Approved: AN
Scale: 1" = 20'
Date: 03/01/2021
Project No: 20044
20044-SITE DK SITE SITE.scr
Drawing No:
C-200

NOT FOR CONSTRUCTION

AREA SHOWING CONCRETE PATIO NORTH OF SHED
THAT HAD PREVIOUSLY BEEN REMOVED BY
HOMEOWNER

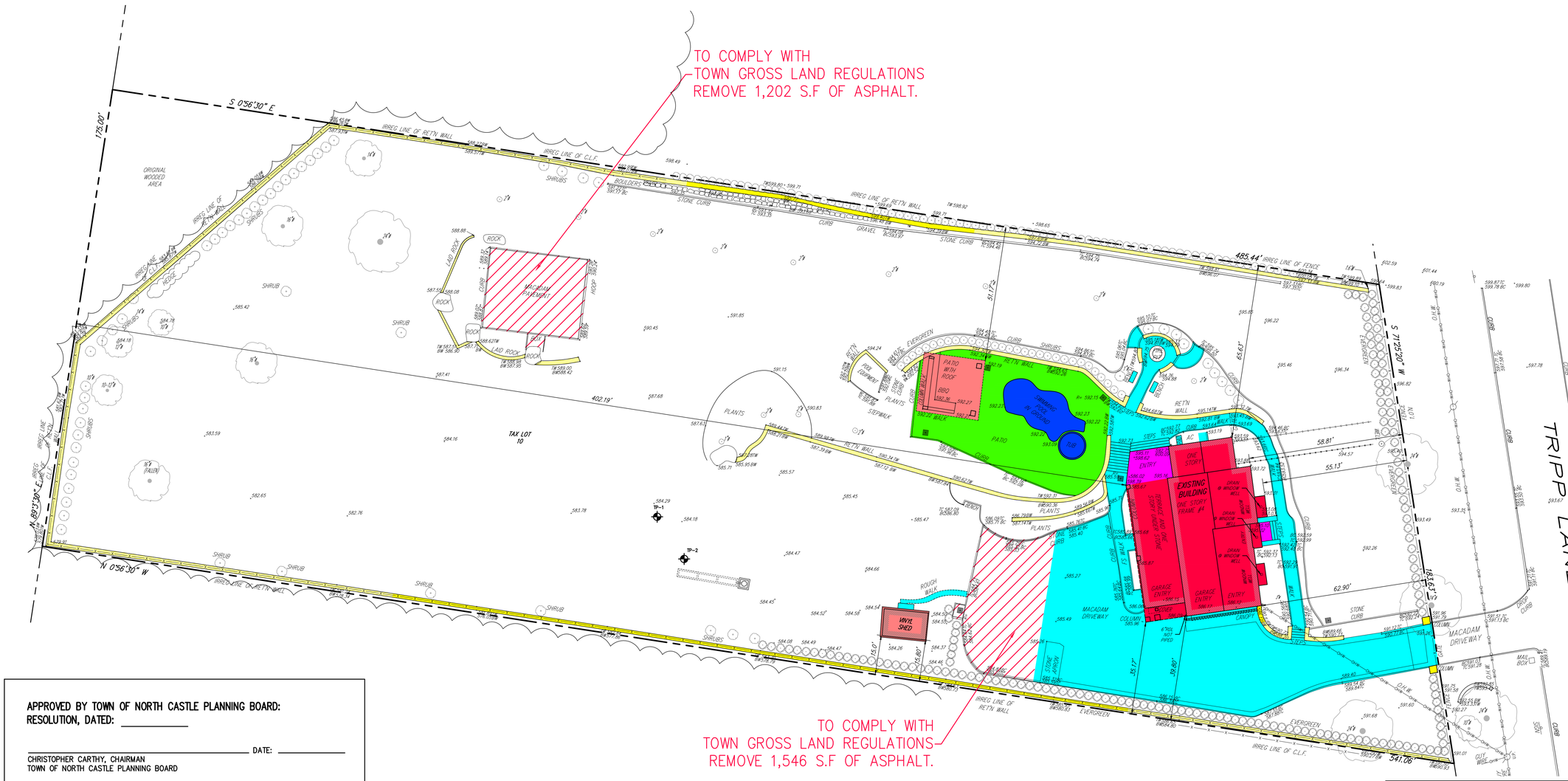
LEGEND

- PRINCIPAL BUILDING = 2,786 S.F.
- ACCESSORY BUILDINGS = 739 S.F.
- PORCHES = 228 S.F.
- DRIVEWAY, PARKING AREAS AND WALKWAYS = 6,686 S.F.
- TERRACES = 1,964 S.F.
- POOL = 485 S.F.
- STRUCTURES, WALLS (ABOVE 4') = 584 S.F.
- WALLS (BELOW 4') NOT TO BE INCLUDED = 1,914 S.F.

*PER TOWN OF NORTH CASTLE CODE, SECTION 355-26(C):
LOT SIZE OF 2.0 ACRES OR MORE
MAXIMUM PERMITTED GROSS FLOOR AREA FOR ONE-FAMILY DWELLINGS =
13,270 SF PLUS 7.5% OF THE LOT AREA IN EXCESS OF 2.0 ACRES

LOT AREA = 2.062 AC., THEREFORE 0.062 AC. OR 2,700 SF GREATER THAN 2 ACRES
7.5% OF 2,700 SF = 202 SF + 13,270 SF = 13,472 SF ALLOWABLE CROSS LAND COVERAGE

TO COMPLY WITH
TOWN GROSS LAND REGULATIONS
REMOVE 1,202 S.F OF ASPHALT.



APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
RESOLUTION, DATED: _____

_____ DATE: _____
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GROSS LAND COVERAGE PLAN

PEREIRA RESIDENCE
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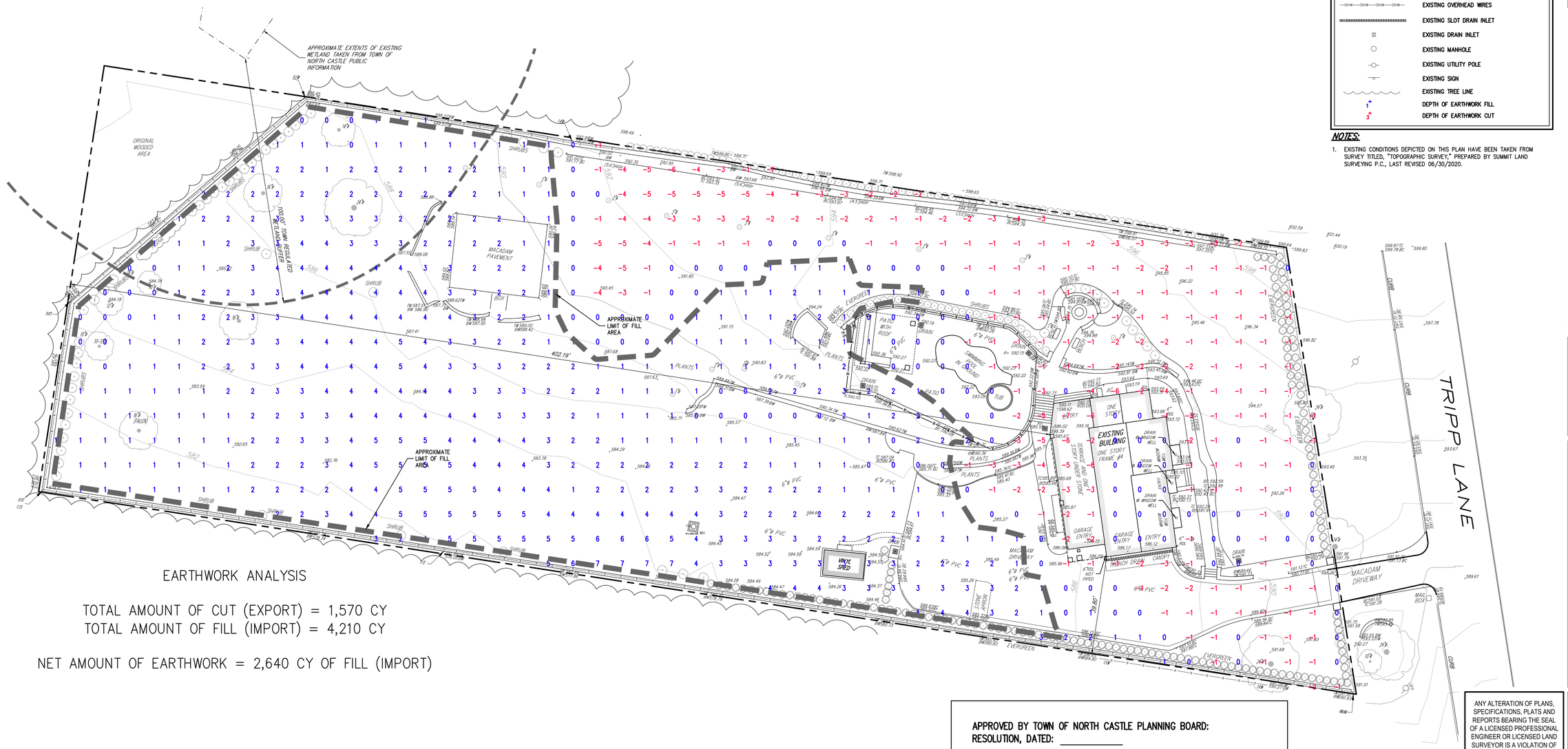
No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	08/31/2021	RB
2.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB
3.	PLANNING BOARD SUBMISSION	01/09/2023	RB
	Previous Editions Obsolete		

Drawn: DK Approved: AN
Scale: 1" = 20'
Date: 03/01/2021
Project No: 20044
20044-SITE DK GROSSLAND COV QLC-nov15
Drawing No:
C-310



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- EXISTING SLOT DRAIN INLET
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING TREE LINE
- DEPTH OF EARTHWORK FILL
- DEPTH OF EARTHWORK CUT

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY SUMMIT LAND SURVEYING P.C., LAST REVISED 06/30/2020.

EARTHWORK ANALYSIS

TOTAL AMOUNT OF CUT (EXPORT) = 1,570 CY
TOTAL AMOUNT OF FILL (IMPORT) = 4,210 CY

NET AMOUNT OF EARTHWORK = 2,640 CY OF FILL (IMPORT)

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
RESOLUTION, DATED: _____

_____ DATE: _____
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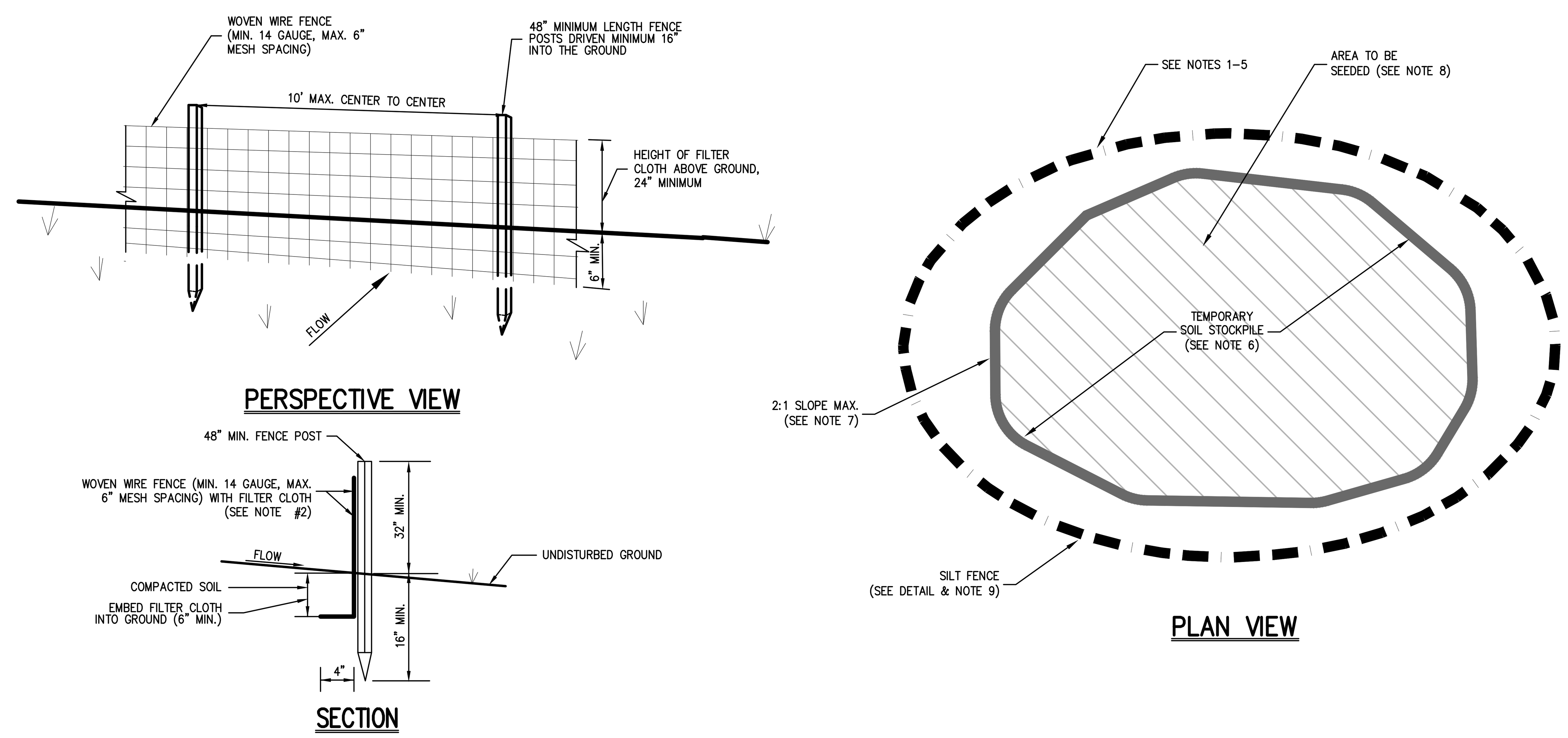
CUT AND FILL PLAN

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

Drawn: DK Approved: AN
Scale: 1" = 20'
Date: 03/01/2021
Project No: 20044
20044-SITE DK | CUT AND FILL | GRAD.scr
Drawing No:
C-410

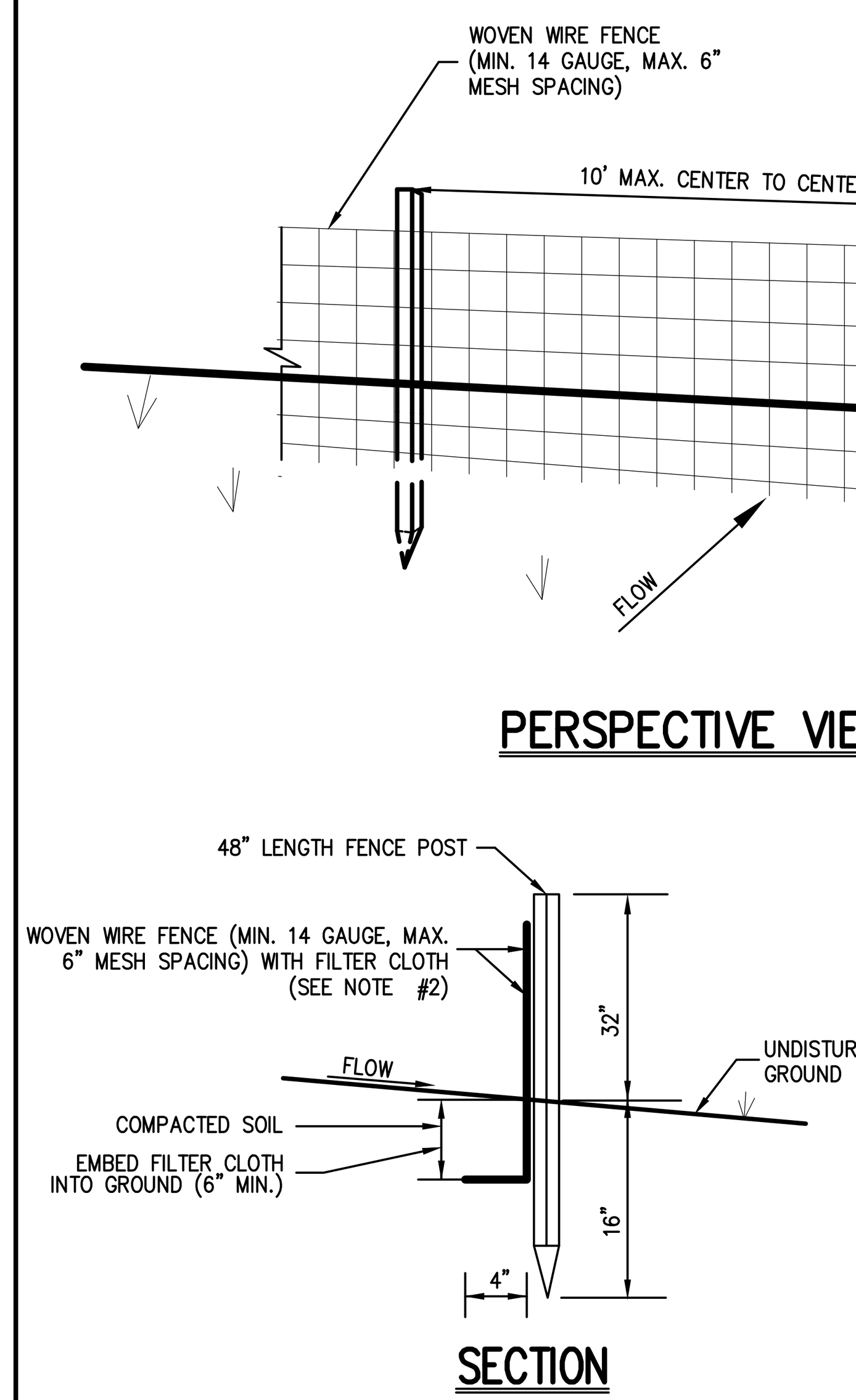
FREDERICK BOHLANDER — STATE OF NEW YORK — 100532-1 — REGISTERED PROFESSIONAL ENGINEER



NOTES:

1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
2. FILTER CLOTH SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABLINKA T140N, OR APPROVED EQUAL.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
6. THE AREA CHOSEN FOR ALL TEMPORARY SOIL STOCKPILES SHALL BE DRY AND STABLE.
7. ALL STOCKPILED SOIL SHALL NOT CONTAIN SLOPES GREATER THAN 2:1.
8. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SEEDED WITHIN 24 HOURS. PERENNIAL OR ANNUAL RYEGRASS SHALL BE PLANTED DURING SPRING, SUMMER OR EARLY FALL. WINTER RYE (CEREAL RYE) SHALL BE PLANTED DURING LATE FALL OR EARLY WINTER.
9. ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCING INSTALLED AROUND THE PERIMETER.

TEMPORARY SOIL STOCKPILE WITH SILT FENCE — 1



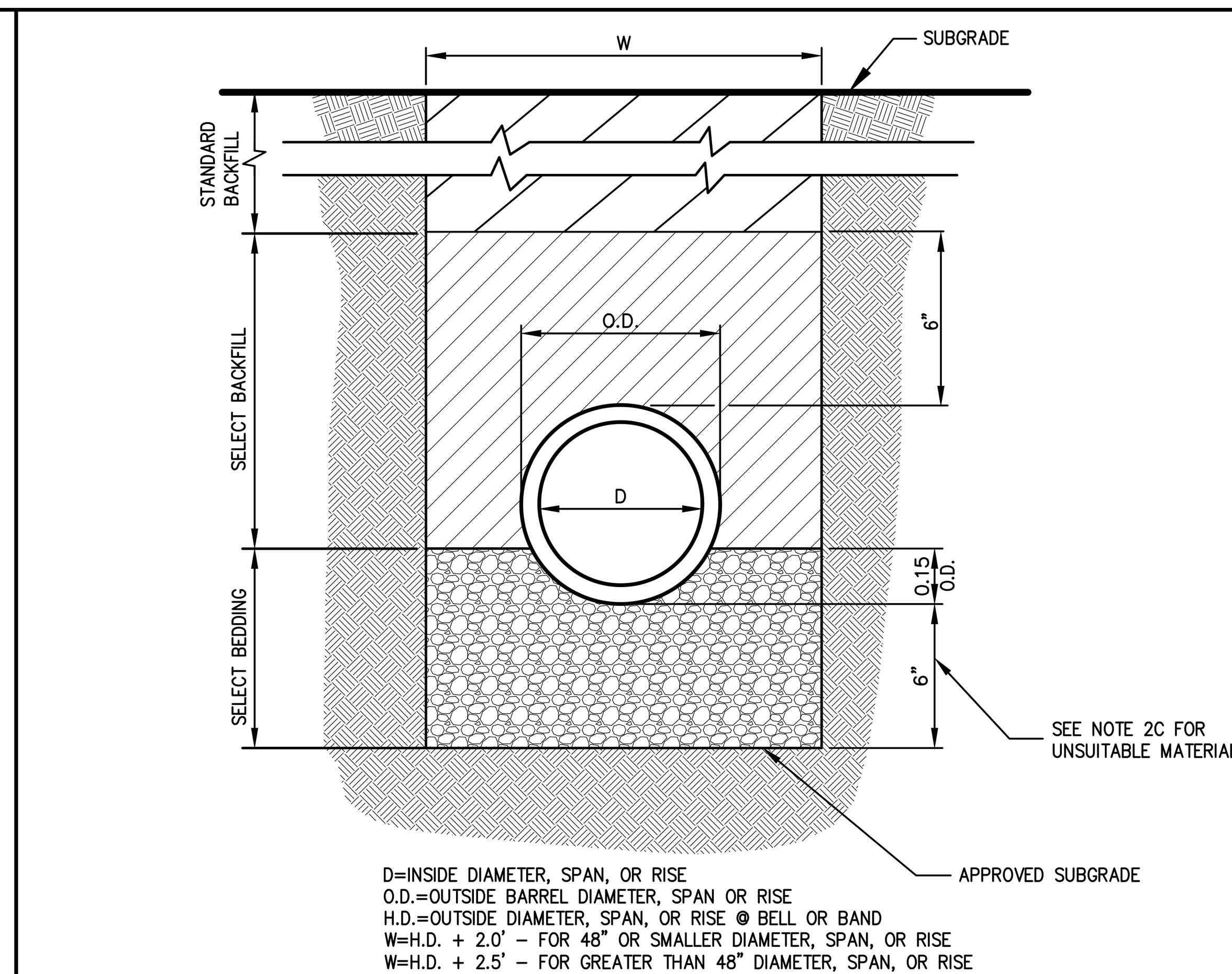
SLOPE	STEEPNESS	SLOPE LENGTH/FENCE LENGTH (FT.)
2-10%	50:1 TO 10:1	250/2000
10-20%	10:1 TO 5:1	150/1000
20-33%	5:1 TO 3:1	80/750
33-50%	3:1 TO 2:1	70/350
>50%	>2:1	30/175

*ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE, BUT AT LEAST 10 FEET FROM THE TOE OF A SLOPE STEEPER THAN 3H:1V, TO ALLOW FOR MAINTENANCE AND ROLL DOWN. THE AREA BEYOND THE FENCE MUST BE UNDISTURBED OR STABILIZED.

NOTES:

1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
2. FILTER CLOTH SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABLINKA T140N, OR APPROVED EQUAL.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE — 2



D=INSIDE DIAMETER, SPAN, OR RISE
O.D.=OUTSIDE BARREL DIAMETER, SPAN OR RISE
H.D.=OUTSIDE DIAMETER, SPAN, OR RISE @ BELL OR BAND
W=H.D. + 2.0' – FOR 48" OR SMALLER DIAMETER, SPAN, OR RISE
W=H.D. + 2.5' – FOR GREATER THAN 48" DIAMETER, SPAN, OR RISE

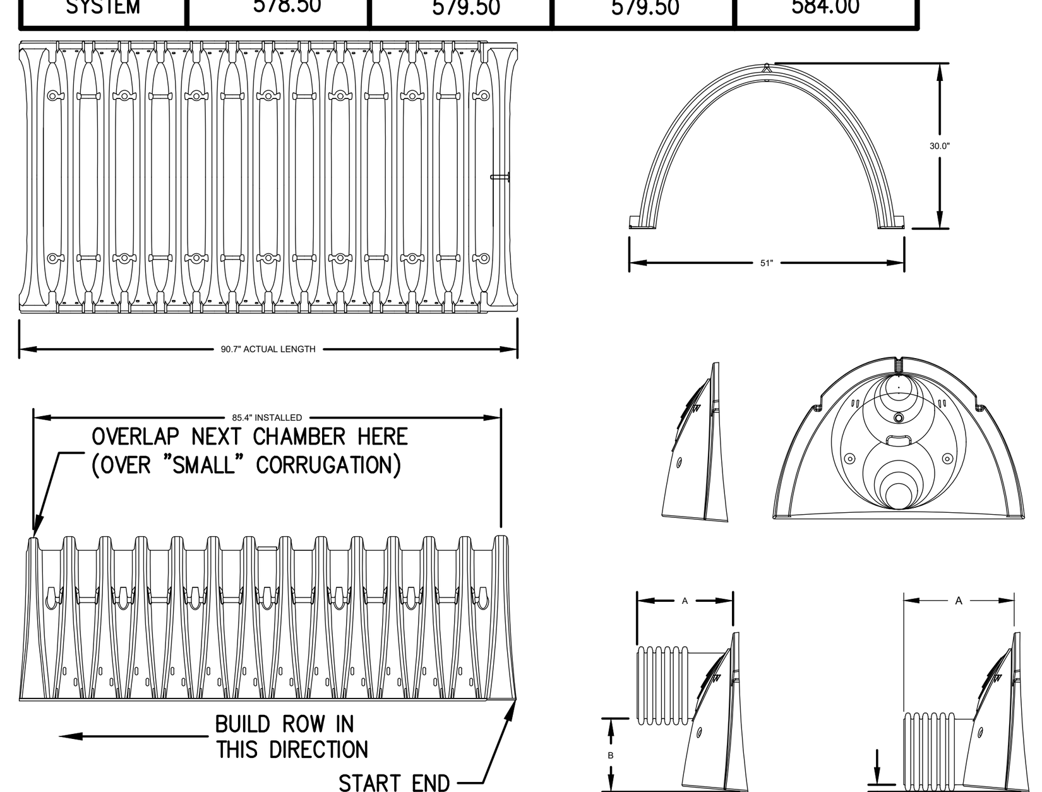
NOTES:

1. FOR TYPE II TRENCH, MATERIAL FOR SELECT BEDDING AND SELECT BACKFILL SHALL BE:
   A. EITHER SAND OR CRUSHED STONE IF NO WATER IS ENCOUNTERED IN TRENCH.
   B. 3/4"CRUSHED STONE IF WATER IS ENCOUNTERED IN TRENCH.
2. TYPE II TRENCH SHALL BE USED IN ALL OF THE FOLLOWING CASES:
   A. FOR ALL CORRUGATED POLYETHYLENE DRAIN PIPE (CPDP) AND PVC PIPE AND CONDUIT INSTALLATION.
   B. WHEN ROCK OR HARDPAN IS ENCOUNTERED IN BOTTOM OF TRENCH.
   C. WHEN UNSUITABLE MATERIAL IS ENCOUNTERED IN BOTTOM OF TRENCH. IN SUCH CASE DEPTH OF UNDERCUTTING SHALL BE AS DIRECTED BY THE ENGINEER WITH 6" MINIMUM.
3. FOR ALL TRENCH EXCAVATION IN FILL AREAS, ALL EMBANKMENTS SHALL BE CONSTRUCTED TO A MINIMUM OF 2 FEET ABOVE THE OUTSIDE TOP (AT THE BELL) OF THE PIPE PRIOR TO BEGINNING ANY TRENCH EXCAVATION.
4. BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN A MAXIMUM OF TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES. UNLESS OTHERWISE SPECIFIED BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 92% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D-1557 IN THE MANNER HEREIN DESCRIBED. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.

TYPE II TRENCH — 3

SCHEDULE OF INVERTS

DESIGNATION	(A) FOUNDATION BOTTOM	(B) CHAMBER BOTTOM	(C) MANIFOLD & INLET STUB INVERT	(D) GRADE
SYSTEM	578.50	579.50	579.50	584.00



ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION[1]	COMPACTION/DENSITY REQUIREMENT
(d) FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISH GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THIS LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
(c) FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THIS LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, < 35% FINES. MOST PAVEMENT SUB-BASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTION AFTER 12" OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" LIFTS TO A MIN. 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs. DYNAMIC FORCE NOT TO EXCEED 20,000 lbs.
(b) EMBEDMENT STONE SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH	3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
(a) FOUNDATION STONE BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH	3, 35, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY[2].

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".

2. AS AN ALTERNATE TO PROCTOR TESTING AND FIELD DENSITY MEASUREMENTS ON OPEN GRADED STONE, STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9"[229 mm] (MAX) LIFTS USING TWO FULL COVERAGES WITH AN APPROPRIATE COMPACTOR.

NOMINAL CHAMBER SPECIFICATIONS

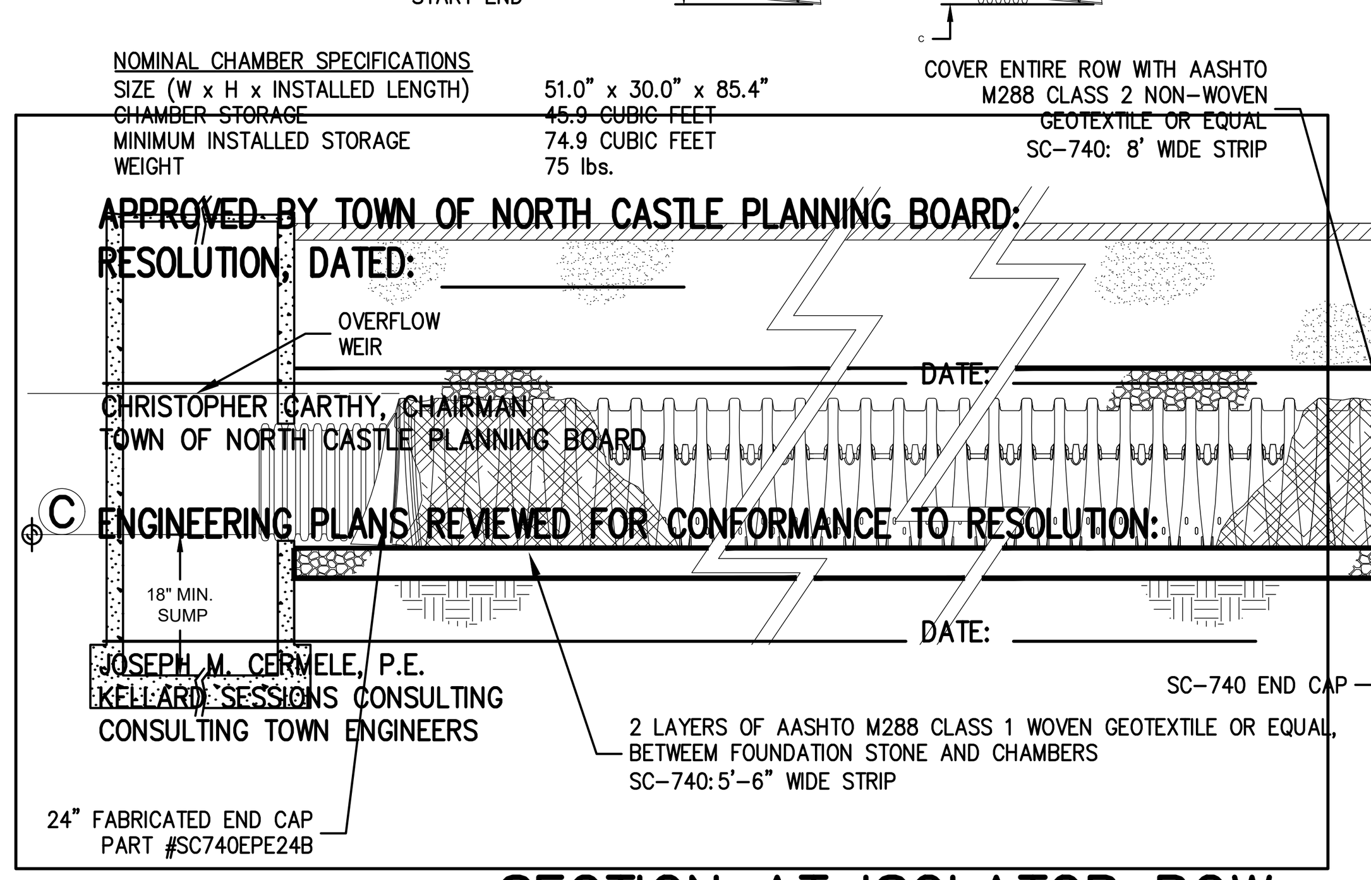
SIZE (W x H x INSTALLED LENGTH)	51.0" x 30.0" x 85.4"
~~CHAMBER STORAGE~~	~~45.9 CUBIC FEET~~
MINIMUM INSTALLED STORAGE	74.9 CUBIC FEET
WEIGHT	75 lbs.

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
RESOLUTION, DATED: ____________

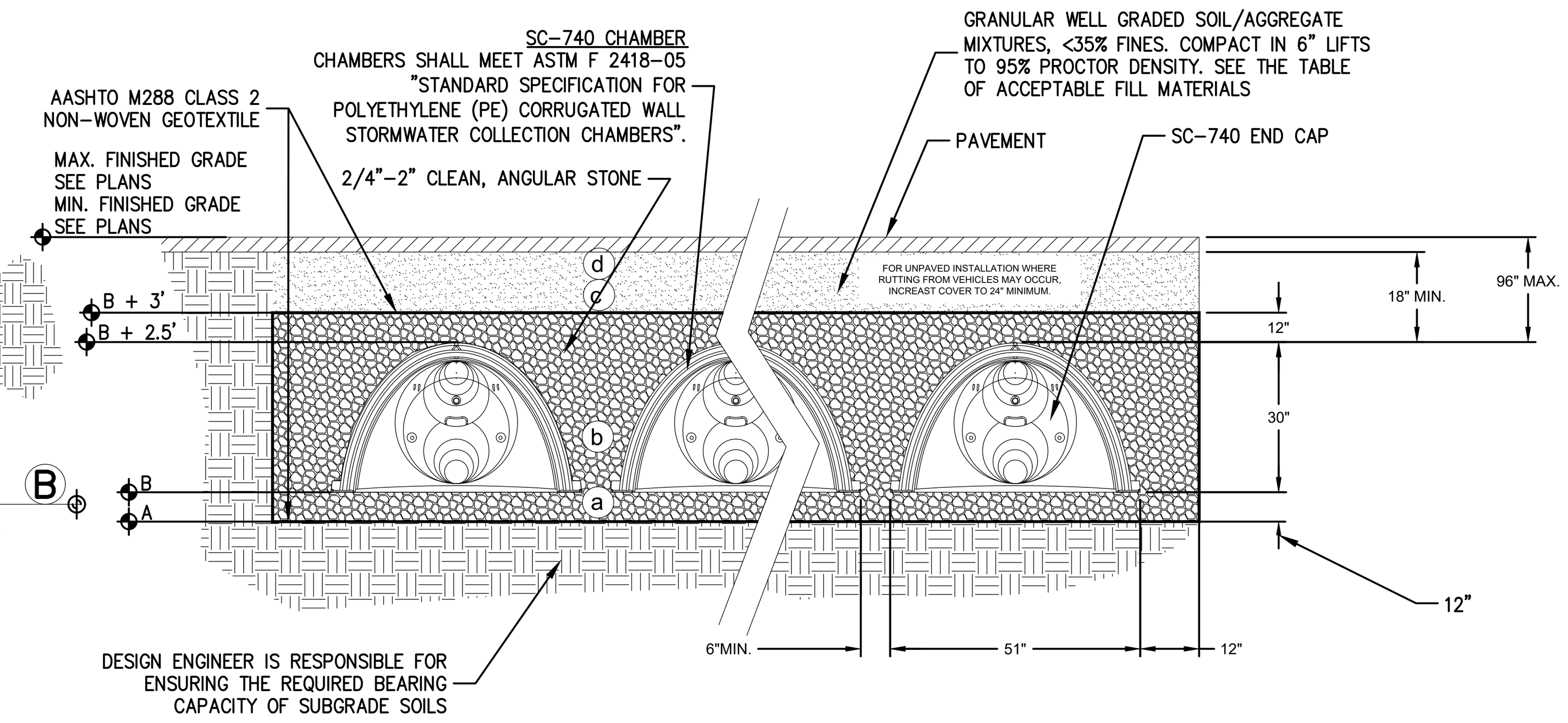
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD
DATE: ____________

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS
DATE: ____________



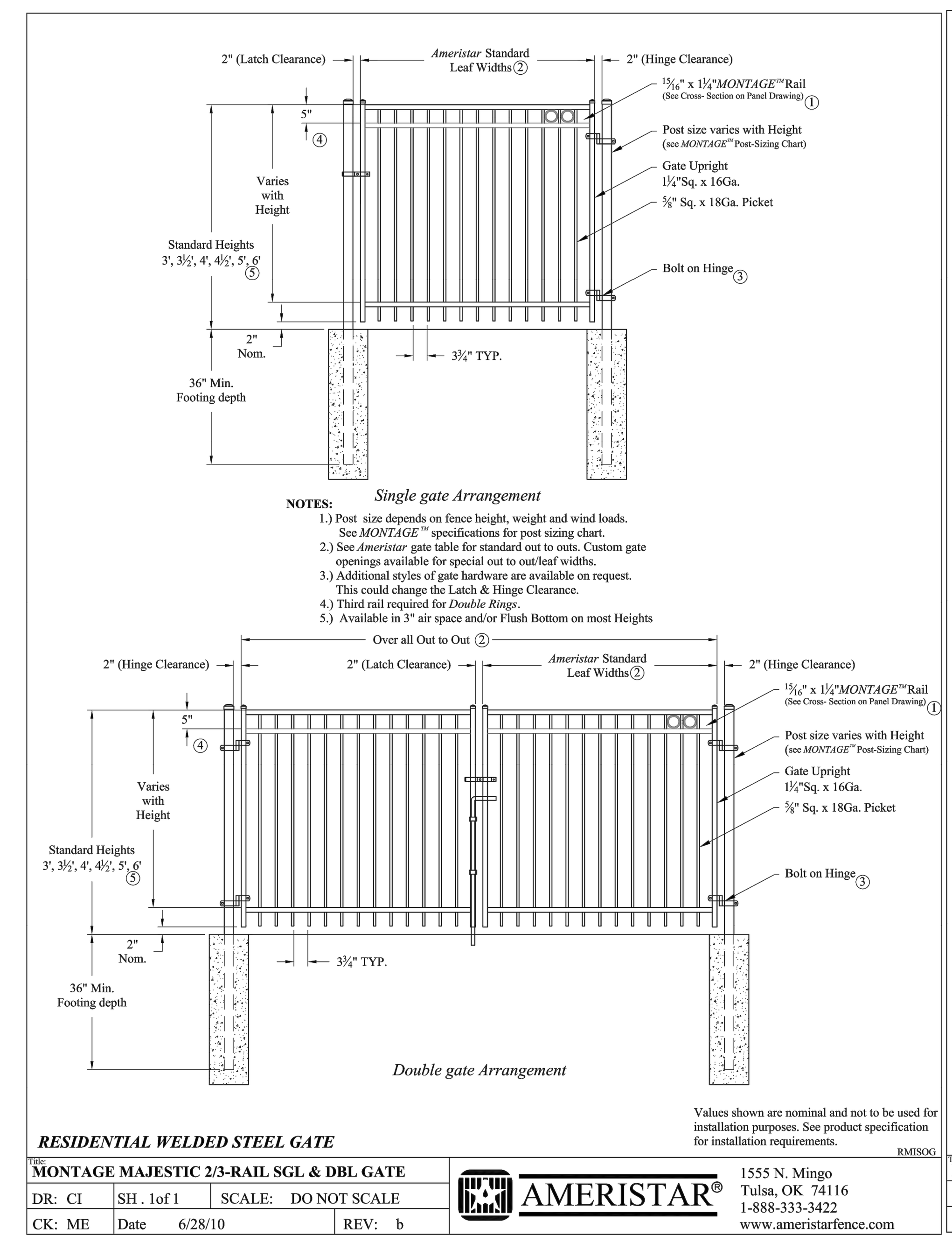
SECTION AT ISOLATOR ROW

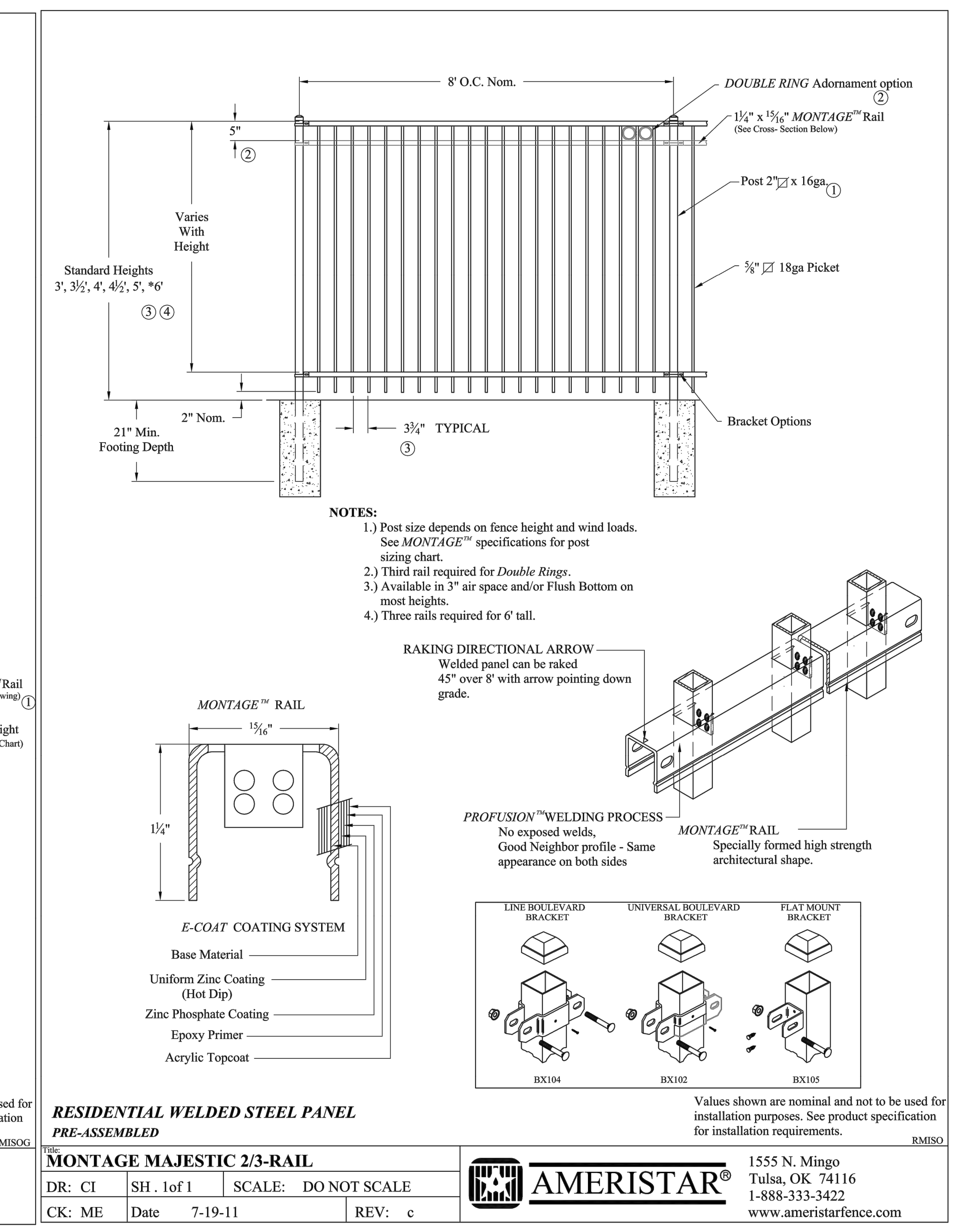


THIS CROSS SECTION DETAILS THE REQUIREMENTS NECESSARY TO SATISFY THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS USING STORMTECH CHAMBERS, WITH CONSIDERATION FOR IMPACT AND MUTIPLE VEHICLE PRESENCES.

SECTION AT DETENTION AND WATER QUALITY CONTROL

STORMTECH CHAMBERS SC-740 — 4





AMERISTAR MONTAGE MAJESTIC FENCE WITH GATE — 5

No.	Revision	Date
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022
2.	PLANNING BOARD SUBMISSION	01/09/2023

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
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voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

CONSTRUCTION DETAILS

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

STATE OF NEW YORK • FREDERICK BOHLANDER • 100532-1 • LICENSED PROFESSIONAL ENGINEER

Drawn: DK	Approved: AN
Scale: NOT TO SCALE	
Date: 03/01/2021	
Project No: 20044	
20044-DETAILS	-
Drawing No: C-900	

NOTES PERTAINING TO DRAIN INLETS

A-1 STEPS WILL NOT BE REQUIRED IN INLETS LESS THAN FOUR (4) FEET IN DEPTH. STEPS WILL BE REQUIRED IN INLETS FOUR (4) FEET OR GREATER IN DEPTH. DEPTHS FOR DRAIN INLETS SHALL BE MEASURED FROM FINISHED GRADE TO INSIDE BOTTOM OF STRUCTURE (INCLUDING SUMP AS APPLICABLE).

A-2 WHEN STEPS ARE REQUIRED, STEPS SHALL COMPLY WITH THE SAME REQUIREMENTS OF ASTM STANDARD C-478, ARTICLE 13 ENTITLED "MANHOLE STEPS & LADDERS".

A-3 FOR MASONRY STRUCTURES, THE FIRST COURSE OF MASONRY SHALL BE SET IN THE CONCRETE FOUNDATION BEFORE THE CONCRETE HAS SET. CONCRETE FOUNDATION SHALL BE CLASS "A"(4000 psi) CONCRETE, TWELVE (12) INCHES THICK AND SHALL EXTEND SIX (6) INCHES BEYOND THE OUTSIDE FACE THE STRUCTURE.

A-4 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND CONSTRUCT THE PROPER SIZE STRUCTURE INCLUDING THE NECESSARY OPENINGS TO ACCOMMODATE THE WORK AS SHOWN ON THE PLANS OR ORDERED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.

A-5 ALL NECESSARY PATCHING FOR DRAIN STRUCTURES SHALL BE ACCOMPLISHED WITH NON-SHRINKING CEMENT MORTAR GROUT, APPROVED EQUAL TO SIKA-SET AS MANUFACTURED BY THE SIKA CHEMICAL CORP.

A-6 FOUNDATIONS FOR PRECAST CONCRETE STRUCTURES SHALL BE SET ON A COMPACTED LAYER OF APPROVED CRUSHED STONE HAVING A MINIMUM COMPACTED THICKNESS OF EIGHT (8) INCHES.

A-7 ALL PIPES SHALL BE CUT FLUSH WITH THE INSIDE WALL OF THE STRUCTURE.

A-8 PROVIDE REINFORCED CONCRETE TOP SLAB FOR OVERSIZED DRAIN INLETS WITH PROPER SIZE OPENING TO ACCOMMODATE INSTALLATION OF FRAME & GRATE.

A-9 FOR MASONRY STRUCTURES GREATER THAN TEN (10) FEET IN DEPTH, THICKNESS OF MASONRY WALLS SHALL BE INCREASED TO TWELVE (12) INCHES.

A-10 FOR ALL STRUCTURES GREATER THAN 10 FEET IN DEPTH, STRUCTURES SHALL PROVIDE MINIMUM INSIDE DIMENSIONS OF 4 FEET X 4 FEET.

NOTES PERTAINING TO MANHOLES

B-1 PRECAST CONCRETE MANHOLES SHALL COMPLY WITH ASTM STANDARD C-478. MANHOLE JOINTS SHALL COMPLY WITH ASTM STANDARD C-443.

B-2 FOR PRECAST CONCRETE MANHOLES FIVE (5) FEET OR LESS IN HEIGHT, TOP CONE SECTION SHALL BE REPLACED WITH PRECAST REINFORCED CONCRETE SLAB (6" MIN. THICKNESS) WITH OPENING OF SUFFICIENT SIZE TO ACCOMMODATE MANHOLE CASTING.

B-3 FOR MANHOLES 10 FEET OR MORE IN DEPTH, MANHOLE DIAMETER SHALL BE FIVE (5) FEET.

B-4 TERMINAL MANHOLE FLOORS SHALL BE SLOPED TOWARD OUTFALL PIPE.

B-5 INVERT CHANNELS FOR PRECAST CONCRETE MANHOLES SHALL BE CONSTRUCTED OF CONCRETE.

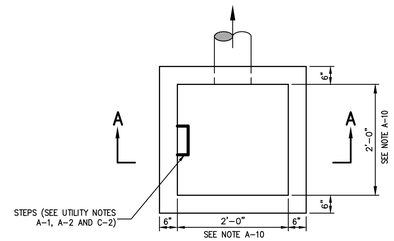
B-6 NOTES A-1, A-2, A-4, A-5, A-6 & A-7 UNDER "NOTES PERTAINING TO DRAIN INLETS" ABOVE SHALL APPLY TO MANHOLES.

NOTES PERTAINING TO PRECAST CONCRETE STRUCTURES FOR STORM DRAINS, SANITARY SEWERS AND WATER LINES

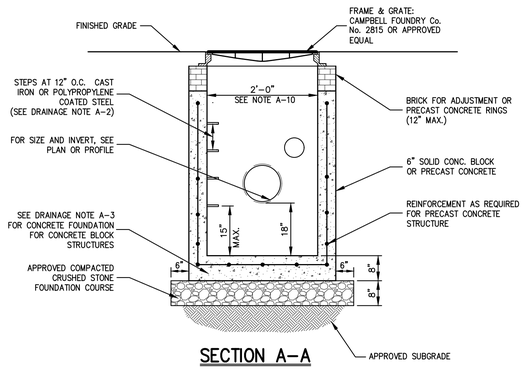
C-1 ALL PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD.

C-2 STEPS SHALL BE LOCATED WITHIN STRUCTURE TO AVOID PLACEMENT OVER PIPES WHEN PRACTICABLE.

UTILITY NOTES 6



PLAN

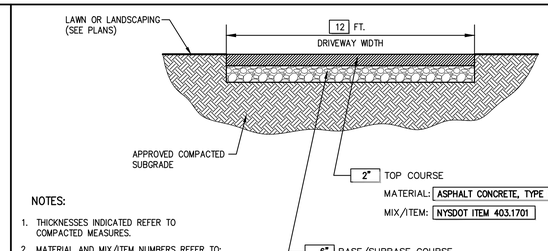


SECTION A-A

NOTE

1. SEE NOTES PERTAINING TO DRAIN INLETS UNDER UTILITY NOTES ON THIS DRAWING.

LAWN INLET (TYPE LI) 7
(with sump)

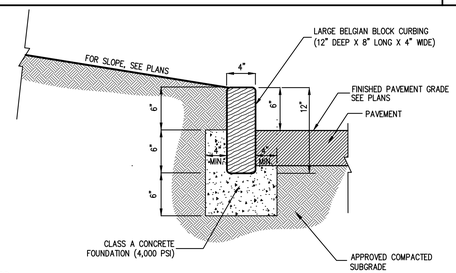


NOTES:

1. THICKNESSES INDICATED REFER TO COMPACTED MEASURES.
2. MATERIAL AND MIX/ITEM NUMBERS REFER TO:

NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS

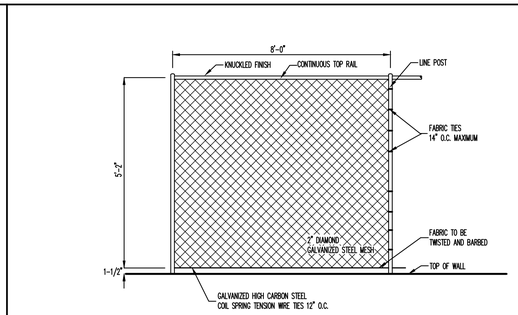
SITE DRIVEWAY 8



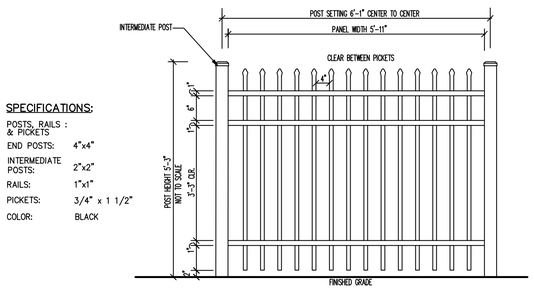
NOTES

1. JOINTS SHALL BE NO WIDER THAN 3/4" AND SHALL BE MORTARED. JOINTS SHALL BE FULLY FILLED WITH 1:2 CEMENT MORTAR, NEATLY POINTED AND CLEANED OF EXCESS MORTAR.

STONE CURB
(BELGIAN BLOCK) 9



CHAIN LINK FENCE
(GALVANIZED) 10



SPECIFICATIONS:

POSTS, RAILS : & PICKETS	
END POSTS:	4"x4"
INTERMEDIATE POSTS:	2"x2"
RAILS:	1"x1"
PICKETS:	3/4" x 1 1/2"
COLOR:	BLACK

BLACK ALUMINUM FENCE 11

No.	Revision	Date
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022
2.	PLANNING BOARD SUBMISSION	01/09/2023

Previous Editions Obsolete

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voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

SPECIFICATIONS:

COLUMN HEIGHT:	6'-6"
CAP:	2'-10" X 3'-1" 6" HEIGHT (INCLUDES UPPER SECTION)
GATE:	8'-0" W (ONE SIDE) 6'-9" HT. @ CENTER 5'-0" HT. @ CONNECTION TO PIER
LIGHT:	2'-0" HT.
	TOTAL HEIGHT: 9'-0"

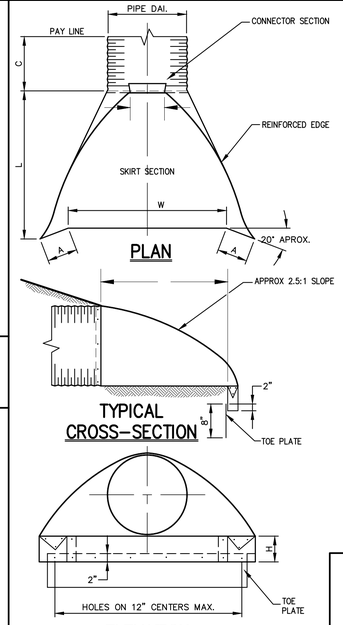
GATE AND STONE PIER 12

DRY LAID BOULDER WALL 13

STONE AND MORTAR WALL
(WITH STONE CAP) 14

STONE AND MORTAR WALL
(WITH CHAIN LINK FENCE ON TOP) 15

SHED
(WITH PATIO REMOVED) 16



PLAN

TYPICAL CROSS-SECTION

NOTES:

1. TOE PLATE TO BE PUNCHED TO MATCH HOLES IN SKIRT LIP. 3/8" GALV BOLTS TO BE FURNISHED. LENGTH OF TOE PLATE IS W+10" FOR 12" TO 30" DIA. PIPE AND W+22" FOR 36" TO 60" DIA. PIPE.
2. SKIRT SECTION FOR 12" TO 30" DIA. PIPE TO BE MADE IN ONE PIECE.
3. SKIRT SECTION OF 36" TO 54" DIA. PIPE MAY BE MADE FROM TWO SHEETS JOINED BY RIVETING OR BOLTING ON CENTER LINE, 60" MAY BE CONSTRUCTED IN 3 PIECES.
4. CONNECTOR SECTION, CORNER PLATE, AND TOE PLATE TO BE SAME SHEET THICKNESS AS SKIRT.
5. END-SECTIONS AND FITTINGS ARE TO BE GALVANIZED STEEL OR ALUMINUM ALLOY FOR USE WITH LIKE PIPE.
6. WHERE FLARED END-SECTIONS ARE TO BE USED WITH BITUMINOUS COATED AND PAVED METAL PIPE, THEY ARE TO BE GALVANIZED ONLY.

ELEVATION

END SECTION
(METAL - FLARED END) 17

ALTERNATE CONNECTION

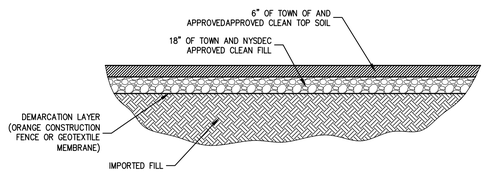
PIPE DIA.	SHEET THICKNESS		DIMENSIONS					
	STEEL	ALUMINUM	A 1" TOL	B MAX	H 1" TOL	L 1.5" TOL	W 2" TOL	C
6"	0.064"	0.060"	6"	6"	6"	21"	24"	24"

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
RESOLUTION, DATED: _____

_____ DATE: _____
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

_____ DATE: _____
JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS



SOIL DEMARCATION LAYER 18

CONSTRUCTION DETAILS

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · FREDERICK BOHLINGER · 100532-1 · LICENSED PROFESSIONAL ENGINEER

Drawn:	DK
Approved:	AN
Scale:	NOT TO SCALE
Date:	03/01/2021
Project No:	20044
20044-DETAILS	-
Drawing No:	C-901

NOT FOR CONSTRUCTION

STORMWATER POLLUTION PREVENTION PLAN

JMC Project 20044
Residential Zoning Compliance Analysis
4 Tripp Lane
Town of North Castle, New York
January 9, 2022

I. INTRODUCTION

This report has been prepared to study the stormwater management aspects of the previous improvements performed by the client prior to the Town's approval and subsequent proposed drainage improvements located at the above address.

The previous improvements included the expansion of the residence, the installation of a pool patio, the installation of a separate patio area located in the backyard, the installation of a basketball court in the backyard and driveway improvements. These previous improvements have increased the square footage of impervious surfaces which will now require stormwater runoff mitigation. These improvements also increased the coverage numbers of the Site over the permitted limit. The applicant is proposing to remove approximately 2,750 square feet of impervious area (the basketball court and a large portion of the driveway) to comply with this requirement.

A hydrologic analysis of the overall site and its sub-drainage areas studied herein was prepared using the USDA Soil Conservation Service TR-55 "Urban Hydrology for Small Watersheds" methodology for the following rainfall event shown in Table 1:

Table 1
TR-55 24 Hour Rainfall Depths

Design Storm Recurrence Interval	Inches of Rainfall
100 Year Storm Event	**9.1**

Rainfall depths shown in the table above for the Town of North Castle in Westchester County are taken from the Extreme Precipitation Tables from the Northeast Regional Climate Center 24-hour rainfall frequency data from Cornell University's precip.net.

As detailed below, the previous improvements have caused a net increase in the overall impervious surfaces which will be mitigated by the installation of an additional 23-Stormtech 740 units to supplement the previously installed 3 units. This system will reduce the peak rate of runoff and runoff volume associated with the previous improvements when compared to the pre-existing conditions for the 100-year storm event.

II. EXISTING CONDITIONS

Under pre-existing conditions, the Site, in general drains from north to south towards the adjacent lot and eventually towards Byram Hills High School. Three areas were identified as areas where stormwater runoff exits the project site, all located along the southern property line. To simplify the stormwater study, one single design line was used instead of three separate design points, and peak rates of runoff and runoff volumes were reduced at this design line, which incorporates all runoff from the project site.

Existing Drainage Area 1 (EDA-1) is approximately 2.062 acres and includes the entire project site. Stormwater from this drainage area drains from north to south towards the adjacent lot and eventually towards Byram Hills High School. All runoff leaves the project site along the southern property line which will be designated as Design Line #1, as shown on drawing DA-1. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 73 and 9.66 minutes, respectively. Refer to Drawing DA-1 in Appendix C.

III. PROPOSED CONDITIONS

As mentioned above, the previous improvements included the expansion of the residence, the installation of a pool patio, the installation of a separate patio area located in the backyard, the installation of a basketball court in the backyard and driveway improvements. These previous improvements have increased the square footage of impervious surfaces which will now require stormwater runoff mitigation. These improvements also increased the coverage numbers of the Site over the permitted limit. The applicant is proposing to remove approximately 2,750 square feet of impervious area (the basketball court and a large portion of the driveway) to comply with this requirement. The previous improvements have caused a net increase in the overall impervious surfaces which will be mitigated by the installation of an additional 23-Stormtech 740 units to supplement the previously installed 3 units. This system will reduce the peak rate of runoff and runoff volume associated with the previous improvements when compared to the pre-existing conditions for the 100-year storm event.

Proposed Drainage Area 1 (PDA-1) is approximately 1.399 acres, is in the western portion of the site and includes much of the project site. Stormwater from this drainage area drains from north to south towards the adjacent lot and eventually towards Byram Hills High School. All runoff leaves the project site along the southern property line which is designated as Design Line #1, as shown on drawing DA-2. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 74 and 9.18 minutes, respectively. Refer to Drawing DA-2 in Appendix C.

Proposed Drainage Area 1A (PDA-1A) is approximately 0.136 acres and is located in the central portion of the project site. This area includes the pool and improved pool patio area. Stormwater from this drainage area is collected in several inlets dispersed throughout the patio area and under current conditions is being daylighted in the backyard but under proposed conditions will be conveyed to the improved underground infiltration system that will consist of 26-Stormtech 740 units. This system will outlet in the backyard near where the previous outlet had been located. Runoff then drains towards the adjacent lot and eventually towards Byram Hills High School. All runoff leaves the project site along the southern property line which will be designated as Design Line #1, as shown on drawing DA-2. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 88 and 5.00 minutes, respectively. Refer to Drawing DA-2 in Appendix C.

Proposed Drainage Area 1B (PDA-1B) is approximately 0.527 acres and is located in the eastern portion of the project site. This area includes the residence, driveway, shed, walkways and landscaped areas. Stormwater from this drainage area is collected in several inlets dispersed throughout this drainage area and under current conditions is being conveyed to the existing underground infiltration system in the backyard. Under proposed conditions runoff from this area will continue to be conveyed to this underground infiltration system that will now consist of 26-Stormtech 740 units. This system will outlet in the backyard near where the previous outlet had been located. Runoff then drains towards the adjacent lot and eventually towards Byram Hills High School. All runoff leaves the project site along the southern property line which will be designated as Design Line #1, as shown on drawing DA-2. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 82 and 8.94 minutes, respectively. Refer to Drawing DA-2 in Appendix C.

The numbers included in the tables below were obtained from calculations included in Appendix A & B of this report.

Table 2
Percent Reduction in Peak Rate of Runoff (Existing vs. Proposed Conditions)
(Cubic Feet per Second)

Storm Recurrence Frequency (Years)	Existing Peak Runoff Rate (cfs) Design Line 1	Proposed Peak Runoff Rate (cfs) Design Line 1	Percent Reduction (%)
100-year	11.26	11.15	1.0

Table 3
Percent Reduction in Runoff Volume (Existing vs. Proposed Conditions)
(Cubic Feet)

Storm Recurrence Frequency (Years)	Existing Runoff Volume (cf) Design Line 1	Proposed Runoff Volume (cf) Design Line 1	Percent Reduction (%)
100-year	43,587	34,156	21.6

IV. CONCLUSION

Based on the foregoing, it is our professional opinion that the previous improvements will not have an adverse drainage impact to the site, adjacent properties, or downstream areas with the installation of an additional 23-Stormtech 740 units (a total of 26 units).

Respectfully Submitted,

JMC

Rick Bohlander

Rick Bohlander, PE
Project Manager

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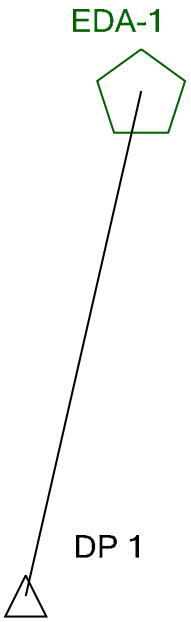
APPENDIX A

EXISTING HYDROLOGIC CALCULATIONS

Scenario: 4 Tripp Street - Synthetic Curve, 1 yrs



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Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft^3)	Time to Peak (hours)	Peak Flow (ft^3/s)
EDA-1	4 Tripp Street - Synthetic Curve, 100 yrs	100	43,587.000	12.150	11.26

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft^3)	Time to Peak (hours)	Peak Flow (ft^3/s)
DP 1	4 Tripp Street - Synthetic Curve, 100 yrs	100	43,587.000	12.150	11.26

Subsection: Time-Depth Curve
Label: Armonk
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Time-Depth Curve: 100 Year	
Label	100 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.2	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.5	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.7	0.7	0.7	0.7	0.7
6.500	0.7	0.8	0.8	0.8	0.8
7.000	0.8	0.8	0.9	0.9	0.9
7.500	0.9	0.9	1.0	1.0	1.0
8.000	1.0	1.1	1.1	1.1	1.1
8.500	1.2	1.2	1.2	1.3	1.3
9.000	1.3	1.4	1.4	1.4	1.5
9.500	1.5	1.6	1.6	1.6	1.7
10.000	1.7	1.8	1.8	1.9	1.9
10.500	2.0	2.0	2.1	2.2	2.2
11.000	2.3	2.4	2.4	2.5	2.6
11.500	2.7	2.9	3.1	3.4	3.8
12.000	4.6	5.3	5.7	6.0	6.3
12.500	6.4	6.5	6.6	6.7	6.8
13.000	6.8	6.9	7.0	7.0	7.1
13.500	7.2	7.2	7.3	7.3	7.4
14.000	7.4	7.4	7.5	7.5	7.6
14.500	7.6	7.7	7.7	7.7	7.8
15.000	7.8	7.8	7.9	7.9	7.9
15.500	8.0	8.0	8.0	8.0	8.1
16.000	8.1	8.1	8.1	8.2	8.2
16.500	8.2	8.2	8.2	8.3	8.3

Subsection: Time-Depth Curve
Label: Armonk
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	8.3	8.3	8.3	8.4	8.4
17.500	8.4	8.4	8.4	8.4	8.5
18.000	8.5	8.5	8.5	8.5	8.5
18.500	8.5	8.6	8.6	8.6	8.6
19.000	8.6	8.6	8.6	8.7	8.7
19.500	8.7	8.7	8.7	8.7	8.7
20.000	8.7	8.7	8.8	8.8	8.8
20.500	8.8	8.8	8.8	8.8	8.8
21.000	8.9	8.9	8.9	8.9	8.9
21.500	8.9	8.9	8.9	8.9	8.9
22.000	9.0	9.0	9.0	9.0	9.0
22.500	9.0	9.0	9.0	9.0	9.0
23.000	9.0	9.1	9.1	9.1	9.1
23.500	9.1	9.1	9.1	9.1	9.1
24.000	9.1	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations
Label: EDA-1
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	60.00 ft
Manning's n	0.400
Slope	0.067 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.142 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	200.00 ft
Is Paved?	False
Slope	0.035 ft/ft
Average Velocity	3.02 ft/s
Segment Time of Concentration	0.018 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.161 hours

Subsection: Time of Concentration Calculations
Label: EDA-1
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Watershed

Subsection: Runoff CN-Area
Label: EDA-1
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft^2)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	31,144.000	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	5,160.000	0.0	0.0	98.000
Woods - good - Soil C	70.000	53,516.000	0.0	0.0	70.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	89,820.000	(N/A)	(N/A)	72.996

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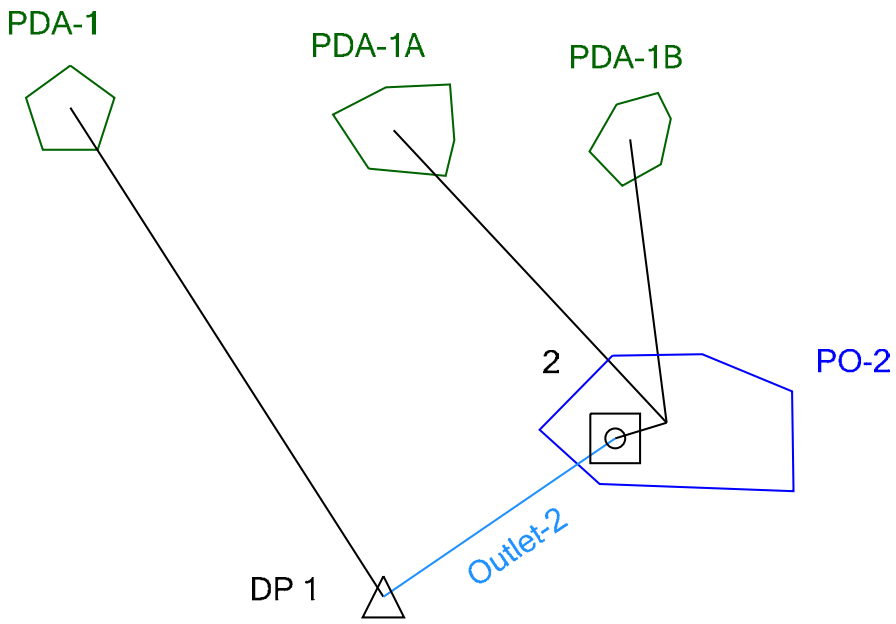
APPENDIX B

PROPOSED HYDROLOGIC CALCULATIONS

Scenario: 4 Tripp Street - Synthetic Curve, 1 yrs



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Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-1	4 Tripp Street - Synthetic Curve, 100 yrs	100	30,194.000	12.150	7.79
PDA-1A	4 Tripp Street - Synthetic Curve, 100 yrs	100	3,788.000	12.100	0.99
PDA-1B	4 Tripp Street - Synthetic Curve, 100 yrs	100	13,285.000	12.100	3.36

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DP 1	4 Tripp Street - Synthetic Curve, 100 yrs	100	34,156.000	12.150	11.15

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
PO-2 (IN)	4 Tripp Street - Synthetic Curve, 100 yrs	100	17,073.000	12.100	4.35	(N/A)	(N/A)
PO-2 (OUT)	4 Tripp Street - Synthetic Curve, 100 yrs	100	3,962.000	12.150	3.35	583.68	2,397.000

Subsection: Time-Depth Curve
Label: Armonk
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Time-Depth Curve: 100 Year	
Label	100 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.2	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.5	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.7	0.7	0.7	0.7	0.7
6.500	0.7	0.8	0.8	0.8	0.8
7.000	0.8	0.8	0.9	0.9	0.9
7.500	0.9	0.9	1.0	1.0	1.0
8.000	1.0	1.1	1.1	1.1	1.1
8.500	1.2	1.2	1.2	1.3	1.3
9.000	1.3	1.4	1.4	1.4	1.5
9.500	1.5	1.6	1.6	1.6	1.7
10.000	1.7	1.8	1.8	1.9	1.9
10.500	2.0	2.0	2.1	2.2	2.2
11.000	2.3	2.4	2.4	2.5	2.6
11.500	2.7	2.9	3.1	3.4	3.8
12.000	4.6	5.3	5.7	6.0	6.3
12.500	6.4	6.5	6.6	6.7	6.8
13.000	6.8	6.9	7.0	7.0	7.1
13.500	7.2	7.2	7.3	7.3	7.4
14.000	7.4	7.4	7.5	7.5	7.6
14.500	7.6	7.7	7.7	7.7	7.8
15.000	7.8	7.8	7.9	7.9	7.9
15.500	8.0	8.0	8.0	8.0	8.1
16.000	8.1	8.1	8.1	8.2	8.2
16.500	8.2	8.2	8.2	8.3	8.3

Subsection: Time-Depth Curve
Label: Armonk
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	8.3	8.3	8.3	8.4	8.4
17.500	8.4	8.4	8.4	8.4	8.5
18.000	8.5	8.5	8.5	8.5	8.5
18.500	8.5	8.6	8.6	8.6	8.6
19.000	8.6	8.6	8.6	8.7	8.7
19.500	8.7	8.7	8.7	8.7	8.7
20.000	8.7	8.7	8.8	8.8	8.8
20.500	8.8	8.8	8.8	8.8	8.8
21.000	8.9	8.9	8.9	8.9	8.9
21.500	8.9	8.9	8.9	8.9	8.9
22.000	9.0	9.0	9.0	9.0	9.0
22.500	9.0	9.0	9.0	9.0	9.0
23.000	9.0	9.1	9.1	9.1	9.1
23.500	9.1	9.1	9.1	9.1	9.1
24.000	9.1	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations
Label: PDA-1
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.060 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.19 ft/s
Segment Time of Concentration	0.149 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	82.00 ft
Is Paved?	False
Slope	0.110 ft/ft
Average Velocity	5.35 ft/s
Segment Time of Concentration	0.004 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.153 hours

Subsection: Time of Concentration Calculations
Label: PDA-1
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Subsection: Time of Concentration Calculations
Label: PDA-1B
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.070 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.20 ft/s
Segment Time of Concentration	0.140 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	24.00 ft
Is Paved?	False
Slope	0.042 ft/ft
Average Velocity	3.31 ft/s
Segment Time of Concentration	0.002 hours

Segment #3: TR-55 Channel Flow	
Flow Area	0.2 ft²
Hydraulic Length	233.00 ft
Manning's n	0.012
Slope	0.030 ft/ft
Wetted Perimeter	0.79 ft
Average Velocity	8.53 ft/s
Segment Time of Concentration	0.008 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.149 hours

Subsection: Time of Concentration Calculations
Label: PDA-1B
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Watershed

Subsection: Runoff CN-Area
Label: PDA-1
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft^2)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	55,562.000	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	327.000	0.0	0.0	98.000
Woods - good - Soil C	70.000	5,034.000	0.0	0.0	70.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	60,923.000	(N/A)	(N/A)	73.798

Subsection: Runoff CN-Area
Label: PDA-1A
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	2,401.000	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	3,521.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	5,922.000	(N/A)	(N/A)	88.270

Subsection: Runoff CN-Area
Label: PDA-1B
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	12,539.000	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	8,356.000	0.0	0.0	98.000
Woods - good - Soil C	70.000	2,080.000	0.0	0.0	70.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	22,975.000	(N/A)	(N/A)	82.367

Storage Chamber			
ID	130	Notes	Created on 02/10/2010. Please check with the manufacturer for the latest data.
Label	SC-740 Chamber		

Storage Chamber			
Effective Length	7.12 ft	Manufacturer	StormTech
Section Length Varies?	False	Default Spacing	0.50 ft

Depth-Incremental Volume Per Unit Length Curve

Depth (ft)	Incremental Volume Per Unit Length (ft^3/ft)
0.08	0.31
0.17	0.31
0.25	0.31
0.33	0.30
0.42	0.30
0.50	0.30
0.58	0.29
0.67	0.29
0.75	0.28
0.83	0.28
0.92	0.27
1.00	0.27
1.08	0.26
1.17	0.25
1.25	0.25
1.33	0.24
1.42	0.23
1.50	0.22
1.58	0.21
1.67	0.20
1.75	0.19
1.83	0.18
1.92	0.17
2.00	0.15
2.08	0.13
2.17	0.11
2.25	0.09

Subsection: Storage Chamber System
Label: PO-2
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Depth-Incremental Volume Per Unit Length Curve

Depth (ft)	Incremental Volume Per Unit Length (ft^3/ft)
2.33	0.04
2.42	0.02
2.50	0.01

Storage Chamber			
Storage Chamber Type	Incremental Volume Per Unit Length	Maximum Width	4.25 ft

Storage Chamber (Pond)	
Chamber System Invert	579.25 ft
Chamber System Rows	13
Chambers per Row	2
Chamber System Fill Void Space	40.0 %
Chamber System Row Spacing	6.0 in
Chamber System Side Fill	6.0 in
Chamber System Fill Cover Depth	12.0 in
Chamber System Fill Base Depth	12.0 in
Chamber System Fill Side Slope	0.000 H:V
Chamber System End Fill	6.0 in
Chamber System Includes Header?	False

Subsection: Outlet Input Data
Label: OCS
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	579.25 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	583.75 ft

Outlet Connectivity

Subsection: Outlet Input Data
Label: OCS
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	C0	582.20	583.75
Rectangular Weir	Weir - 1	Forward	C0	583.75	583.75
Culvert-Circular	C0	Forward	TW	581.50	583.75
Tailwater Settings	Tailwater			(N/A)	(N/A)

Subsection: Outlet Input Data
Label: OCS
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Structure ID: C0 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	12.0 in
Length	49.00 ft
Length (Computed Barrel)	49.00 ft
Slope (Computed)	0.010 ft/ft

Outlet Control Data	
Manning's n	0.012
Ke	0.500
Kb	0.027
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0078
M	2.0000
C	0.0379
Y	0.6900
T1 ratio (HW/D)	1.131
T2 ratio (HW/D)	1.291
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	582.63 ft	T1 Flow	2.75 ft³/s
T2 Elevation	582.79 ft	T2 Flow	3.14 ft³/s

Subsection: Outlet Input Data
Label: OCS
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	583.75 ft
Weir Length	1.50 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	582.20 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Elevation-Volume-Flow Table (Pond)
Label: PO-2
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	28.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	579.25 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
579.25	0.00	0.000	948.690	0.00	0.00	0.00
579.75	0.00	189.738	948.690	0.61	0.61	2.72
580.25	0.00	379.476	948.690	0.61	0.61	4.83
580.75	0.00	771.809	948.690	0.61	0.61	9.19
581.25	0.00	1,147.815	948.690	0.61	0.61	13.37
581.50	0.00	1,323.322	948.690	0.61	0.61	15.32
581.75	0.00	1,498.830	948.690	0.61	0.61	17.27
582.20	0.00	1,779.855	948.690	0.61	0.61	20.39
582.25	0.01	1,811.080	948.690	0.61	0.62	20.75
582.75	0.91	2,045.580	948.690	0.61	1.53	24.26
583.25	2.78	2,235.318	948.690	0.61	3.39	28.23
583.75	3.45	2,425.056	948.690	0.61	4.07	31.01

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PDA-1 (Time of Concentration Calculations, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...4, 5

PDA-1A (Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...9

PDA-1B (Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...10

PDA-1B (Time of Concentration Calculations, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...6, 7

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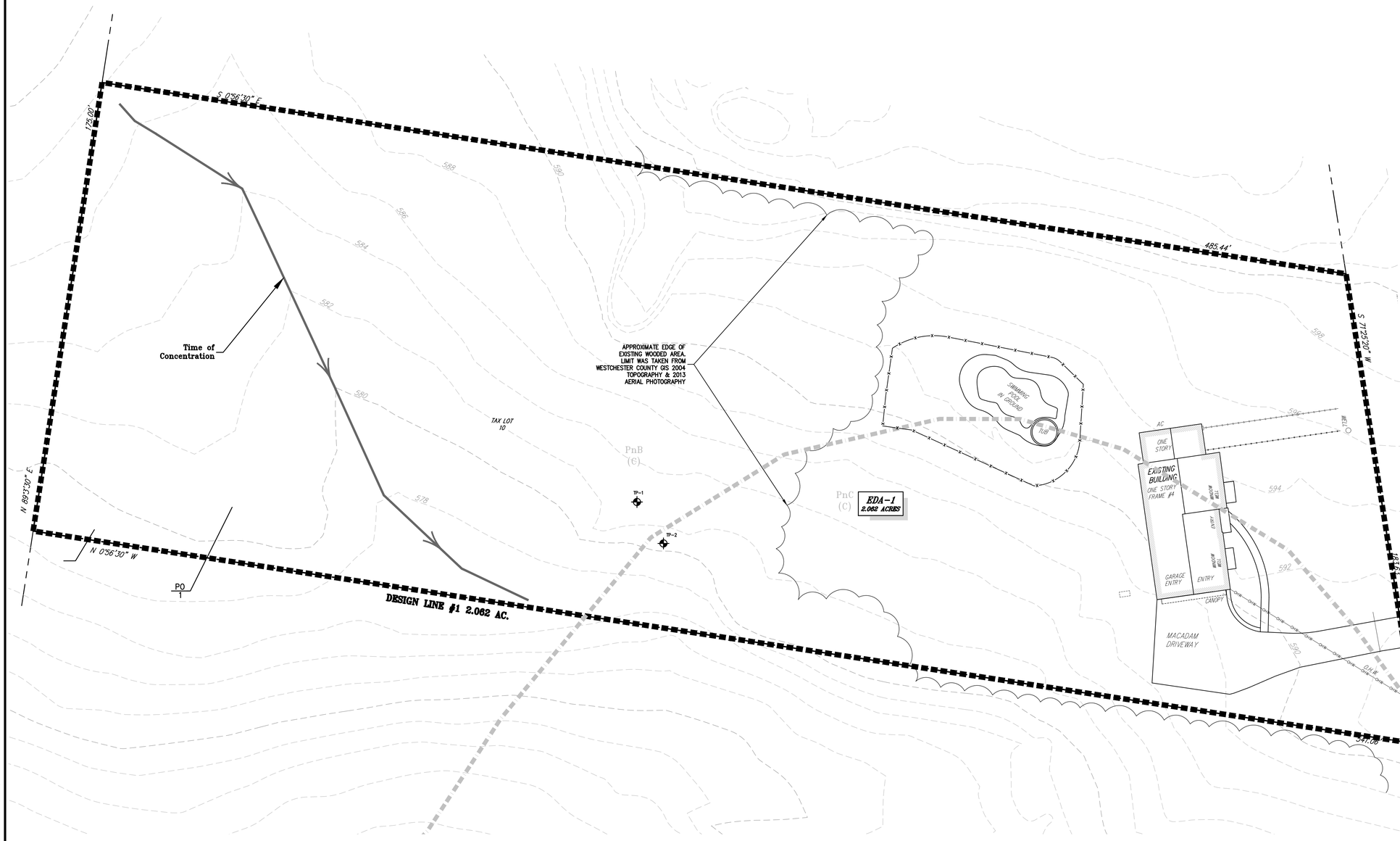
APPENDIX C

DRAWINGS



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING DRY LAID RETAINING WALL
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING OVERHEAD WIRES
- EXISTING SLOT DRAIN INLET
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING TREE LINE
- DRAINAGE DIVIDE
- TIME OF CONCENTRATION
- SOIL DIVIDE AND DESIGNATION

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY SUMMIT LAND SURVEYING P.C., LAST REVISED 06/30/2020.

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RESOLUTION, DATED: _____

_____ DATE: _____
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

_____ DATE: _____
JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS

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No.	Revision	Date	By
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB
2.	PLANNING BOARD SUBMISSION	01/09/2023	RB
	Previous Editions Obsolete		

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TOWN OF NORTH CASTLE, NY

ARCHITECT:
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57 WHEELER AVENUE, SUITE 203
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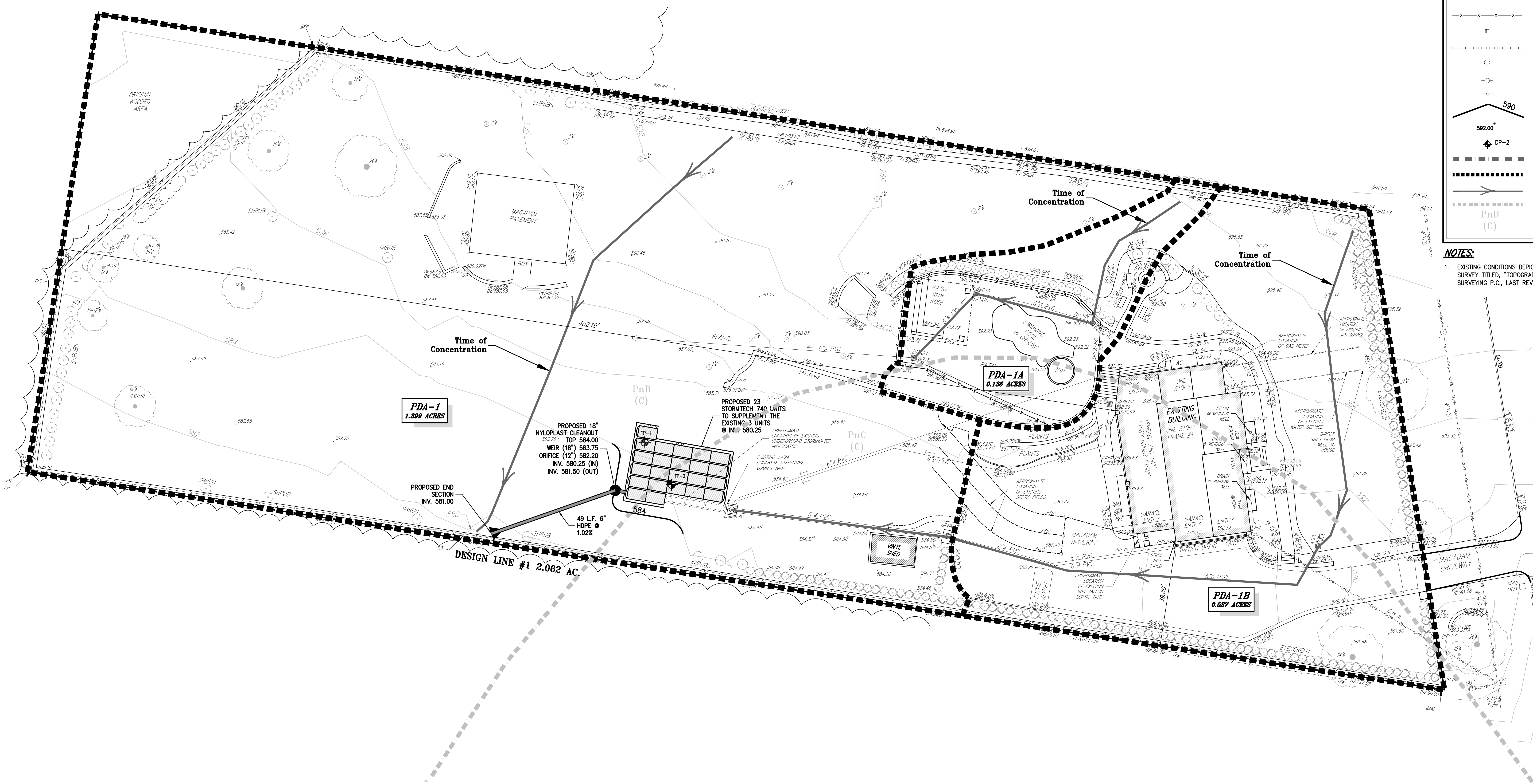
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmepllc.com

PRE-EXISTING DRAINAGE AREA MAP

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

FREDERICK BOHLANDER — STATE OF NEW YORK — 100532-1 — LICENSED PROFESSIONAL ENGINEER

Drawn:	DK	Approved:	AN
Scale:	1" = 20'		
Date:	07/12/2021		
Project No:	20044		
20044-SITE DK	EDA	EDA.ls	
Drawing No:	DA-1		



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING OVERHANG
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- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING SPOT GRADE
- EXISTING BOULDERS
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING DRAIN INLET
- EXISTING SLOT DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING SIGN
- PROPOSED FINISHED GRADE
- PROPOSED SPOT GRADE
- BORING LOCATION AND DESIGNATION
- PROPOSED LIMIT OF DISTURBANCE
- DRAINAGE DIVIDE
- TIME OF CONCENTRATION
- SOIL DIVIDE AND DESIGNATION

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY SUMMIT LAND SURVEYING P.C., LAST REVISED 06/30/2020.

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voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

PROPOSED DRAINAGE AREA MAP

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

PROGRESS PLOTTING

Drawing: 20044-SITE DK
Date: 2023-01-10
Time: 2:50 PM
By:

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RESOLUTION, DATED: ____________

______________________________ DATE: ____________
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

______________________________ DATE: ____________
JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
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Drawn: DK	Approved: AN
Scale: 1" = 20'	
Date: 07/12/2021	
Project No: 20044	
20044-SITE DK	PDA / PDA.ls
Drawing No: DA-2	

APPENDIX D

STORMTECH MODEL SC-740 DETENTION SYSTEM MAINTENANCE SHEETS

SC-310 / SC-740 / DC-780

StormTech®

Detention • Retention • Water Quality

Design Manual

StormTech® Chamber Systems
for Stormwater Management

U.S. GREEN BUILDING COUNCIL MEMBER

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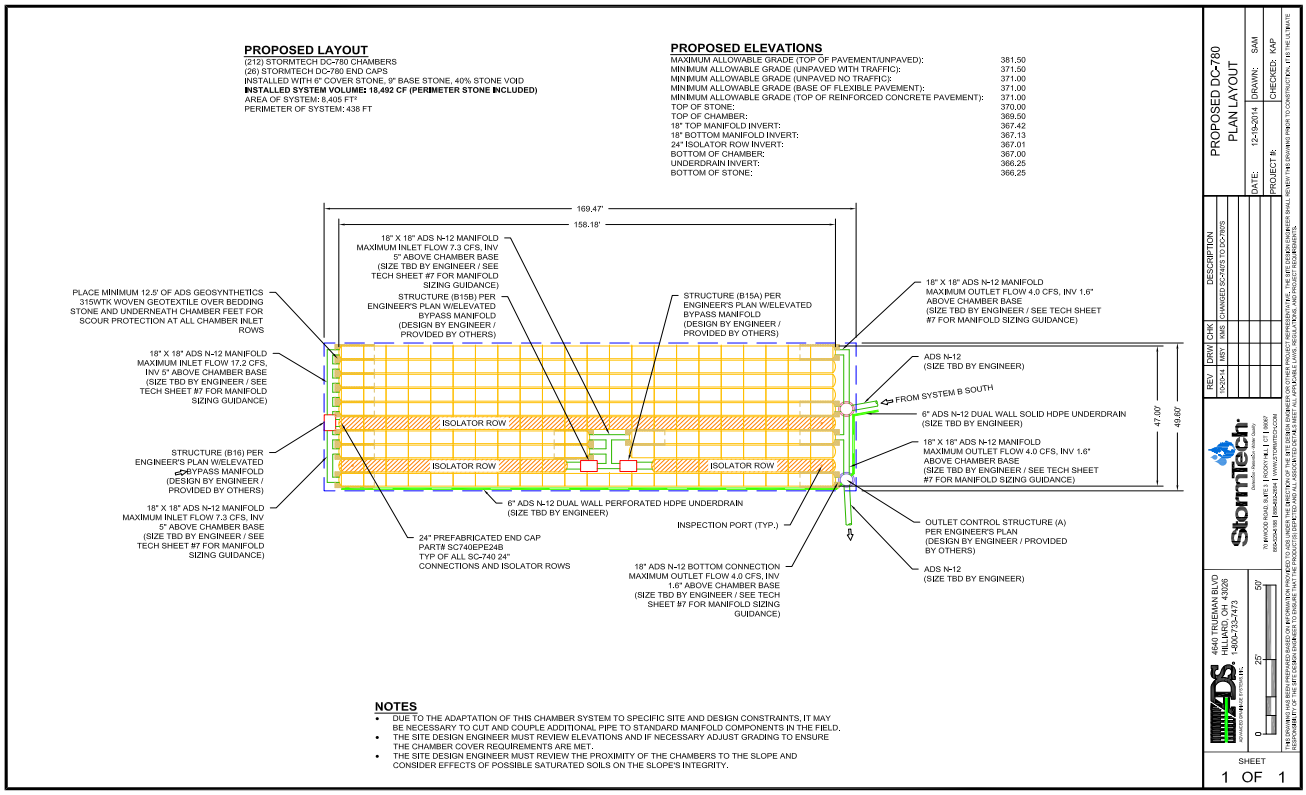
* For MC-3500 and MC-4500 designs, please refer to the MC-3500/MC-4500 Design Manual

The StormTech Technical Services Department assists design professionals in specifying StormTech stormwater systems. This assistance includes the layout of chambers to meet the engineer's volume requirements and the connections to and from the chambers. The Technical Department can also assist converting and cost engineering projects currently specified with ponds, pipe, concrete and other manufactured stormwater detention/retention products. Please note that it is the responsibility of the design engineer to ensure that the chamber bed layout meets all design requirements and is in compliance with applicable laws and regulations governing this project.



This manual is exclusively intended to assist engineers in the design of subsurface stormwater systems using StormTech chambers.

1.0 Introduction

1.1 INTRODUCTION

StormTech stormwater management systems allow stormwater professionals to create more profitable, environmentally sound developments. Compared with other subsurface systems, StormTech systems offer lower overall installed cost, superior design flexibility and enhanced performance. Applications include commercial, residential, agricultural and highway drainage.

StormTech has invested over $10 million and many years in the development of StormTech chambers. These innovative products exceed the rigorous requirements of the standards governing the design of thermoplastic structures.

1.2 THE GOLD STANDARD IN STORMWATER MANAGEMENT

The advanced designs of StormTech chambers were created by implementing an aggressive research, development, design and manufacturing protocol. StormTech chamber products establish the new gold standard in stormwater management through:

- Collaborations with experts in the field of buried plastic structures and polyolefin materials
- The development and utilization of new testing methods and proprietary test methods
- The use of thermoformed prototypes to verify engineering models, perform in-ground testing and install observation sites
- The investment in custom-designed, injection molding equipment
- The utilization of polypropylene and polyethylene as manufacturing materials
- The design of molded-in features not possible with traditional thermoformed chambers

Section 3.0 of this design manual, *Structural Capabilities*, provides a detailed description of the research, development and design process.

Many of StormTech's unique chamber features can benefit a site developer, stormwater system designer, and installer. Where applicable, StormTech Product Specifications are referenced throughout this design manual. If StormTech's unique product benefits are important to a stormwater system design, consider including the applicable StormTech Product Specifications on the site plans. This can prevent substitutions with inferior products. Refer to Section 14.0, *StormTech Product Specifications.*

1.3 PRODUCT QUALITY AND DESIGN TO INTERNATIONAL STANDARDS

StormTech chambers are designed to meet the full scope of design requirements of Section 12.12 of the AASHTO LRFD Bridge Design Specifications and produced to the requirements of the American Society of Testing Materials (ASTM) International specifications F2418 (polypropylene chambers) and F2922 (polyethylene chambers).

StormTech chambers provide the full AASHTO safety factors for live loads and permanent earth loads. The two ASTM standards mentioned previously are linked to the AASHTO LRFD Bridge Design Specifications Section 12.12 design standard. Both ASTM standards require that the safety factors included in the AASHTO guidance are achieved as a prerequisite to meeting either ASTM F2418 or ASTM F2922. StormTech chambers are also designed in accordance with ASTM F2787, "Standard Practice for Structural Design of Thermoplastic Corrugated Wall Stormwater Collection Chambers" which provides specific guidance on how to design thermoplastic chambers in accordance with AASHTO Section 12.12. These standards provide both the assurance of product quality and safe structural design.

For non-proprietary specifications for public bids that ensure high product quality and safe design, consider including the specification in Section 15.0 Chamber Specifications for Contract Documents.

1.4 TECHNICAL SUPPORT FOR PLAN REVIEWS

StormTech's in-house technical support staff is available to review proposed plans that incorporate StormTech chamber systems. They are also available to assist with plan conversions from existing products to StormTech. Not all plan sheets are necessary for StormTech's review. Required sheets include plan view sheet(s) with design contours, cross sections of the stormwater system including catch basins and drainage details.

When specifying StormTech chambers it is recommended that the following items are included in project plans: StormTech chamber system General Notes, applicable StormTech chamber illustrations and StormTech chamber system Product Specifications. These items are available in various formats and can be obtained by contacting StormTech at **1-860-529-8188** or may be downloaded at **www.stormtech.com.**

StormTech's plan review is limited to the sole purpose of determining whether plans meet StormTech chamber systems' minimum requirements. **It is the ultimate responsibility of the design engineer to assure that the stormwater system's design is in full compliance with all applicable laws and regulations.** StormTech products must be designed and installed in accordance with StormTech's minimum requirements.

SEND PLANS TO:

StormTech, Plan Review, 70 Inwood Road, Suite 3, Rocky Hill, CT 06067 E-mail: info@stormtech.com. File size should not exceed 10 MB.

2.0 Product Information

2.1 PRODUCT APPLICATIONS

StormTech chamber systems may function as stormwater detention, retention, first-flush storage, or some combination of these. The StormTech chambers can be used for commercial, municipal, industrial, recreational, and residential applications especially for installations under parking lots and commercial roadways.

One of the key advantages of the StormTech chamber system is its design flexibility. Chambers may be configured into beds or trenches of various sizes or shapes. They can be centralized or decentralized, and fit on nearly all sites. Chamber lengths enhance the ability to develop on both existing and pre-developed projects. The systems can be designed easily and efficiently around utilities, natural or man-made structures and any other limiting boundaries.

2.2 CHAMBERS FOR STORMWATER DETENTION

Chamber systems have been used effectively for stormwater detention for over 15 years. A detention system temporarily holds water while it is released at a defined rate through an outlet. While some infiltration may occur in a detention system, it is often considered an environmental benefit and a storage safety factor. Over 70% of StormTech's installations are non-watertight detention systems. There are only a few uncommon situations where a detention system might need to limit infiltration: the subgrade soil's bearing capacity is significantly affected by saturation such as with expansive clays or karst soils, and; in sensitive aquifer areas where the depth to groundwater does not meet local guidelines. Adequate pretreatment could eliminate concerns for the latter case. A thermoplastic liner may be considered for both situations to limit infiltration.

2.3 STONE POROSITY ASSUMPTION

A StormTech chamber system requires the application of clean, crushed, angular stone below, between and above the chambers. This stone serves as a structural component while allowing conveyance and storage of stormwater. Storage volume examples throughout this Design Manual are calculated with an assumption that the stone has an industry standard porosity of 40%. Actual stone porosity may vary. Contact StormTech for information on calculating stormwater volumes with varying stone porosity assumptions.

2.4 CHAMBER SELECTION

Primary considerations when selecting between the SC-310™, SC-740™ and DC-780™ chambers are the depth to restrictive layer, available area for subsurface storage, cover height and outfall restrictions.

The StormTech SC-310 chamber shown on page 4 is ideal for systems requiring low-rise and wide-span solutions. This low profile chamber allows the storage of large volumes, 1.3 ft^3/ft^2 (0.40 m^3/m^2) [minimum], at minimum depths.

The SC-310 and SC-740 chambers and end plates.

StormTech systems can be integrated into retrofit and new construction projects.

Like the Stormtech SC-310, the StormTech SC-310-3 found on page 6 allows for a design option for sites with both limited cover and limited space. With only 3" of spacing between the chambers, the SC-310-3 still provides 1.3 ft^3/ft^2 (0.40 m^3/m^2) [minimum] of storage.

The StormTech SC-740 chamber shown on page 8 optimizes storage volumes in relatively small footprints. By providing 2.2 ft^3/ft^2 (0.67 m^3/m^2) [minimum] of storage, the SC-740 chambers can minimize excavation, backfill and associated costs.

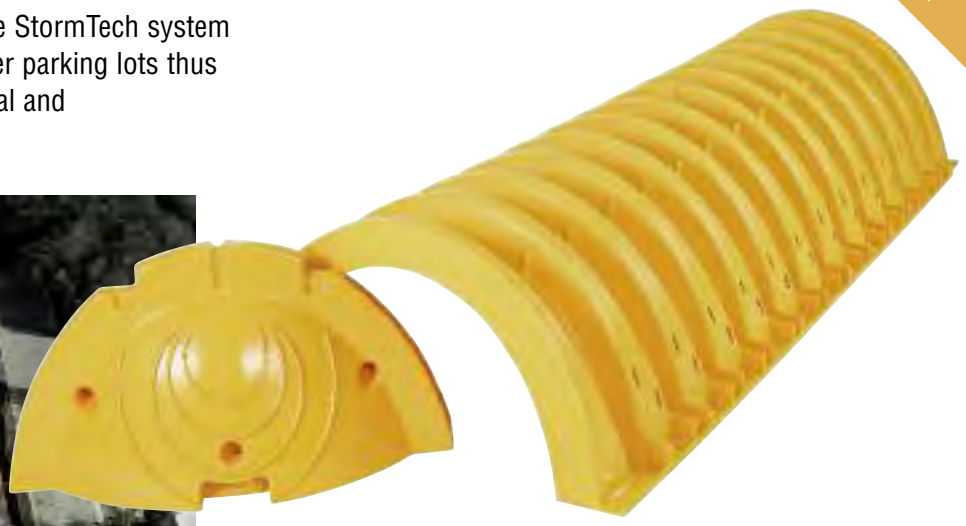
The DC-780 chamber shown on page 10 has been developed for those applications which exceed the maximum 8 ft (2.44 m) burial depth of the SC-740 and SC-310 chambers. The DC-780 is a modified version of the SC-740 allowing it to reach a maximum burial depth of 12 ft (3.66 m). The design of the DC-780 chamber, like other StormTech chambers, is designed and manufactured in accordance with the AASHTO LRFD Bridge Design Specifications as well as ASTM F 2418 and ASTM F 2787 ensuring structural adequacy for deeper systems.

The end corrugations of the DC-780 chamber have not been modified in order to allow connections to the SC-740 chamber. This will allow hybrid systems utilizing both chambers in one system design.

StormTech SC-310 Chamber

SC-310 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots thus maximizing land usage for commercial and municipal applications.



StormTech SC-310 Chamber (not to scale)

Nominal Chamber Specifications

Size (L x W x H)	85.4" x 34.0" x 16.0" (2170 x 864 x 406 mm)
Chamber Storage	14.7 ft³ (0.42 m³)
Min. Installed Storage*	31.0 ft³ (0.88 m³)
Weight	37.0 lbs (16.8 kg)

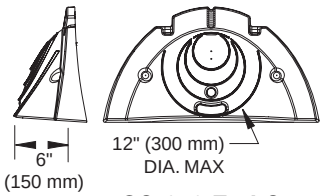
*Assumes 6" (150 mm) stone above, below and between chambers and 40% stone porosity.

Shipping

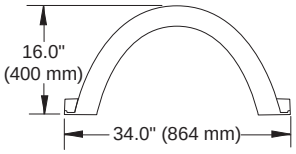
41 chambers/pallet

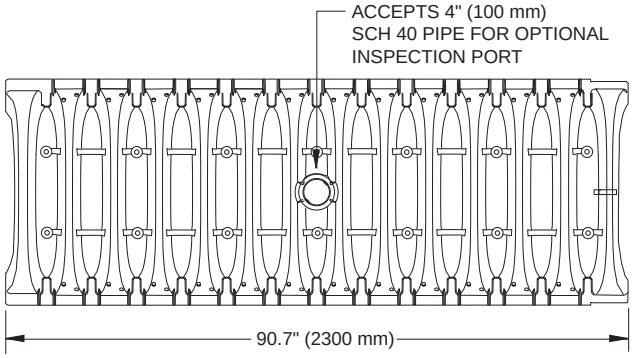
108 end caps/pallet

18 pallets/truck

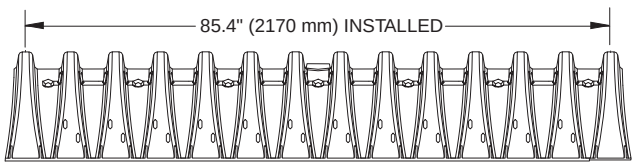


SC-310 End Cap





SC-310 Chamber



StormTech SC-310 Chamber

SC-310 Cumulative Storage Volumes Per Chamber

Assumes 40% Stone Porosity. Calculations are Based Upon a 6" (150 mm) Stone Base Under the Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
28 (711)	14.70 (0.416)	31.00 (0.878)
27 (686)	14.70 (0.416)	30.21 (0.855)
26 (680)	Stone 14.70 (0.416)	29.42 (0.833)
25 (610)	Cover 14.70 (0.416)	28.63 (0.811)
24 (609)	14.70 (0.416)	27.84 (0.788)
23 (584)	14.70 (0.416)	27.05 (0.766)
22 (559)	14.70 (0.416)	26.26 (0.748)
21 (533)	14.64 (0.415)	25.43 (0.720)
20 (508)	14.49 (0.410)	24.54 (0.695)
19 (483)	14.22 (0.403)	23.58 (0.668)
18 (457)	13.68 (0.387)	22.47 (0.636)
17 (432)	12.99 (0.368)	21.25 (0.602)
16 (406)	12.17 (0.345)	19.97 (0.566)
15 (381)	11.25 (0.319)	18.62 (0.528)
14 (356)	10.23 (0.290)	17.22 (0.488)
13 (330)	9.15 (0.260)	15.78 (0.447)
12 (305)	7.99 (0.227)	14.29 (0.425)
11 (279)	6.78 (0.192)	12.77 (0.362)
10 (254)	5.51 (0.156)	11.22 (0.318)
9 (229)	4.19 (0.119)	9.64 (0.278)
8 (203)	2.83 (0.081)	8.03 (0.227)
7 (178)	1.43 (0.041)	6.40 (0.181)
6 (152)	0	4.74 (0.134)
5 (127)	0	3.95 (0.112)
4 (102)	0	3.16 (0.090)
3 (76)	Stone Foundation 0	2.37 (0.067)
2 (51)	0	1.58 (0.046)
1 (25)	0	0.79 (0.022)

Note: Add 0.79 cu. ft. (0.022 m³) of storage for each additional inch (25 mm) of stone foundation.

Storage Volume Per Chamber ft³ (m³)

	Bare Chamber Storage	Chamber and Stone Stone Foundation Depth in. (mm)		
	ft³ (m³)	6 (150)	12 (300)	18 (450)
StormTech SC-310	14.7 (0.4)	31.0 (0.9)	35.7 (1.0)	40.4 (1.1)

Note: Assumes 6" (150 mm) of stone above chambers, 6" (150 mm) row spacing and 40% stone porosity.

Amount of Stone Per Chamber

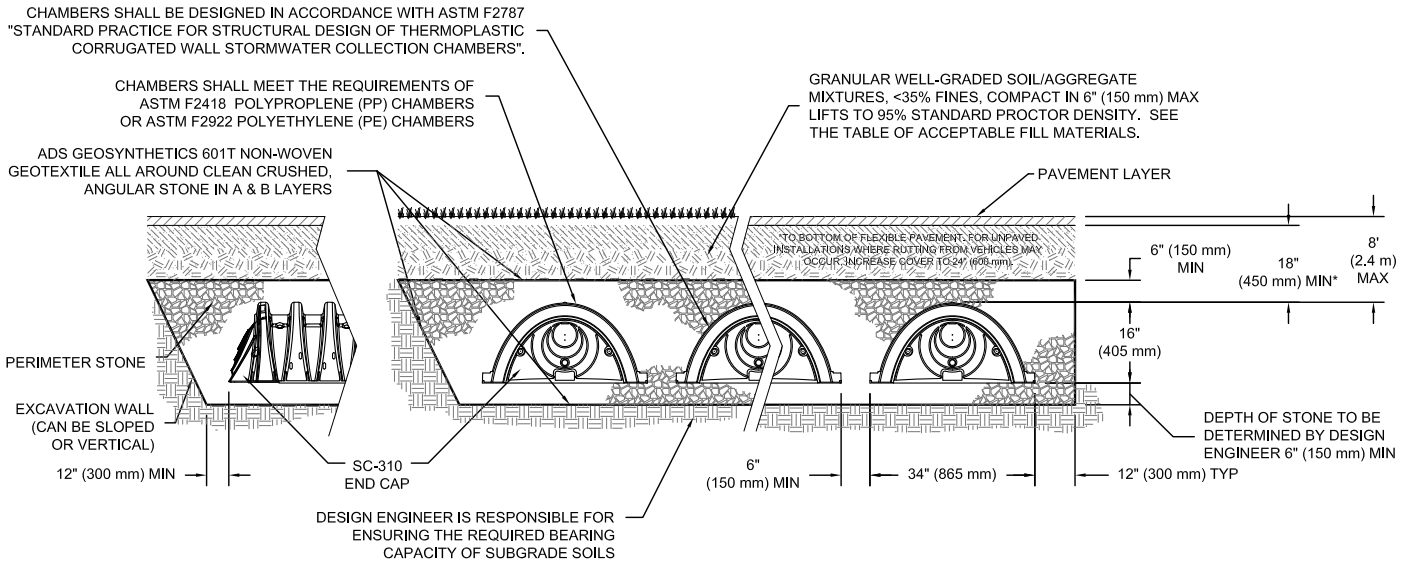
	Stone Foundation Depth		
ENGLISH TONS (yds³)	6"	12"	18"
StormTech SC-310	2.1 (1.5 yd³)	2.7 (1.9 yd³)	3.4 (2.4 yd³)
METRIC KILOGRAMS (m³)	**150 mm**	**300 mm**	**450 mm**
StormTech SC-310	1830 (1.1 m³)	2490 (1.5 m³)	2990 (1.8 m³)

Note: Assumes 6" (150 mm) of stone above, and between chambers.

Volume of Excavation Per Chamber yd³ (m³)

	Stone Foundation Depth		
	6" (150 mm)	12" (300 mm)	18" (450 mm)
StormTech SC-310	2.9 (2.2)	3.4 (2.6)	3.8 (2.9)

Note: Assumes 6" (150 mm) of row separation and 18" (450 mm) of cover. The volume of excavation will vary as the depth of the cover increases.



THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS, WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.

StormTech SC-310-3 Chamber

SC-310-3 Chamber

The proven strength and durability of the SC-310-3 Chamber allows for a design option for sites where limited cover, limited space, high water table and escalated aggregate cost are a factor. The SC-310-3 has a minimum cover requirement of 16" (400 mm) to bottom of pavement and reduces the spacing requirement between chambers by 50% to 3" (76 mm). This provides a reduced footprint overall and allows the designer to offer a traffic bearing application yet comply with water table separation regulations.

StormTech SC-310-3 Chamber (not to scale)

Nominal Chamber Specifications

Size (L x W x H)	85.4" x 34.0" x 16.0" (2170 x 864 x 406 mm)
Chamber Storage	14.7 ft³ (0.42 m³)
Min. Installed Storage*	29.3 ft³ (0.83 m³)
Weight	37.0 lbs (16.8 kg)

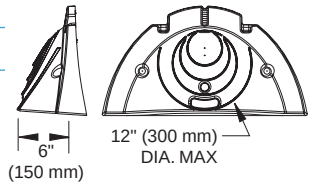
*Assumes 6" (150 mm) stone above and below chambers, 3" (76 mm) row spacing and 40% stone porosity.

Shipping

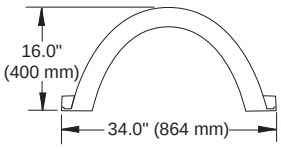
41 chambers/pallet

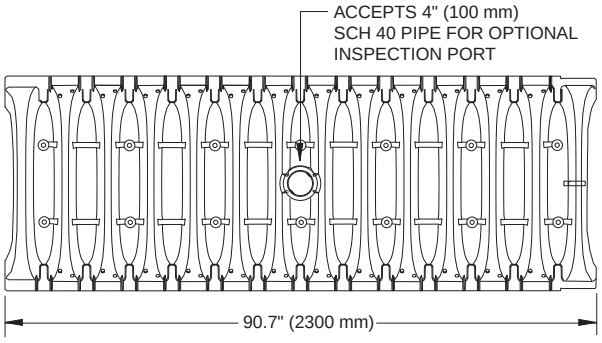
108 end caps/pallet

18 pallets/truck

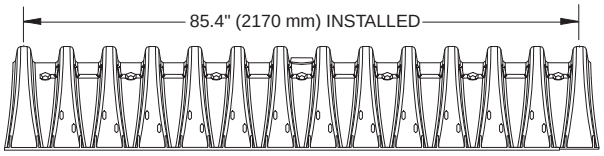


SC-310 End Cap

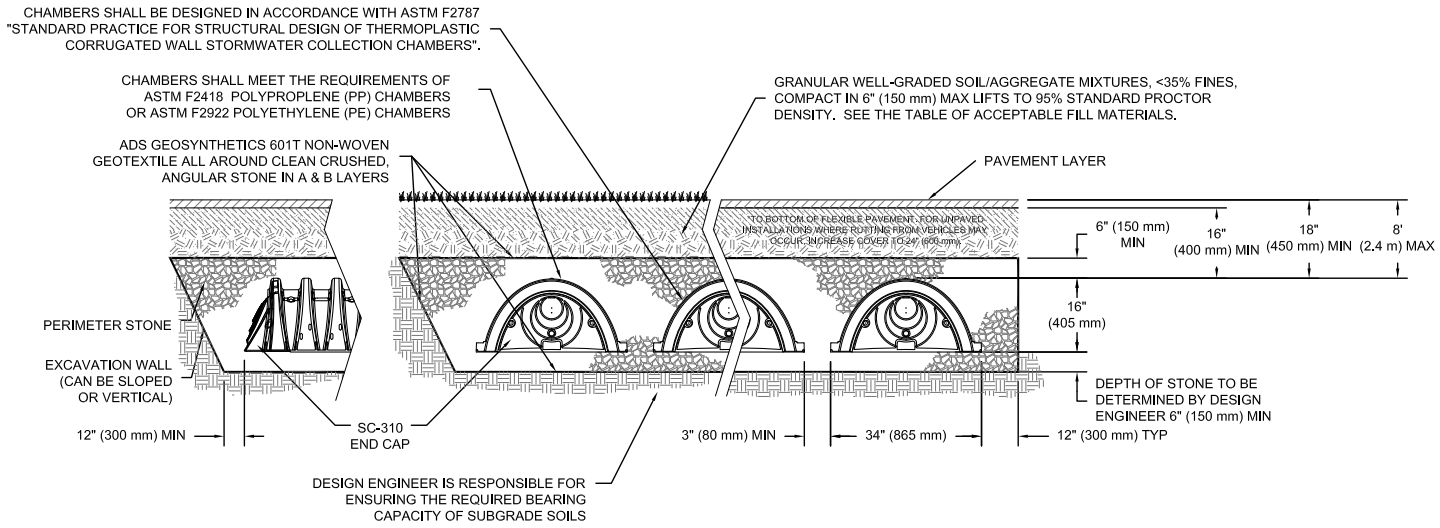




SC-310 Chamber



Typical Cross Section Detail



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StormTech SC-310-3 Chamber

SC-310-3 Cumulative Storage Volume Per Chamber

Assumes 40% Stone Porosity. Calculations are Based Upon a 6" (150 mm) Stone Base Under the Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
28 (711)	14.7 (0.416)	29.34 (0.831)
27 (686)	14.7 (0.416)	28.60 (0.810)
26 (660)	14.7 (0.416)	27.87 (0.789)
25 (635)	14.7 (0.416)	27.14 (0.769)
24 (610)	14.7 (0.416)	26.41 (0.748)
23 (584)	14.7 (0.416)	25.68 (0.727)
22 (559)	14.7 (0.416)	24.95 (0.707)
21 (533)	14.64 (0.415)	24.18 (0.685)
20 (508)	14.49 (0.410)	23.36 (0.661)
19 (483)	14.22 (0.403)	22.47 (0.636)
18 (457)	13.68 (0.387)	21.41 (0.606)
17 (432)	12.99 (0.368)	20.25 (0.573)
16 (406)	12.17 (0.345)	19.03 (0.539)
15 (381)	11.25 (0.319)	17.74 (0.502)
14 (356)	10.23 (0.290)	16.40 (0.464)
13 (330)	9.15 (0.260)	15.01 (0.425)
12 (305)	7.99 (0.226)	13.59 (0.385)
11 (279)	6.78 (0.192)	12.13 (0.343)
10 (254)	5.51 (0.156)	10.63 (0.301)
9 (229)	4.19 (0.119)	9.11 (0.258)
8 (203)	2.83 (0.080)	7.56 (0.214)
7 (178)	1.43 (0.040)	5.98 (0.169)
6 (152)	0	4.39 (0.124)
5 (127)	0	3.66 (0.104)
4 (102)	0	2.93 (0.083)
3 (76)	0	2.19 (0.062)
2 (51)	0	1.46 (0.041)
1 (25)	0	0.73 (0.021)

Stone Cover

Stone Foundation

Note: Add 0.73 ft³ (0.021 m³) of storage for each additional inch (25 mm) of stone foundation.

Storage Volume per Chamber ft³ (m³)

	Bare Chamber Storage	Chamber and Stone Volume Stone Foundation Depth in. (mm)		
	ft³ (m³)	6 (150)	12 (300)	18 (450)
SC-310-3	14.7 (0.42)	29.3 (0.83)	33.7 (0.95)	38.1 (1.08)

Note: Assumes 6" (150 mm) of stone above chambers, 3" (76 mm) row spacing and 40% stone porosity.

Volume of Excavation Per Chamber yd³ (m³)

	Stone Foundation Depth		
	6" (150)	12" (300)	18" (450)
SC-310-3	2.6 (2.0)	3.0 (2.3)	3.4 (2.6)

Note: Assumes 3" (76 mm) of row separation, 6" (150 mm) of stone above the chambers and 16" (400 mm) of cover. The volume of excavation will vary as depth of cover increases.

Amount of Stone Per Chamber

ENGLISH TONS (yd³)	Stone Foundation Depth		
	6"	12"	18"
SC-310-3	1.9 (1.4)	2.5 (1.8)	3.1 (2.2)
METRIC KILOGRAMS (m³)	**150 mm**	**300 mm**	**450 mm**
SC-310-3	1724 (1.0)	2268 (1.3)	2812 (1.7)

Note: Assumes 6" (150 mm) of stone above chambers and 3" (76 mm) row spacing.

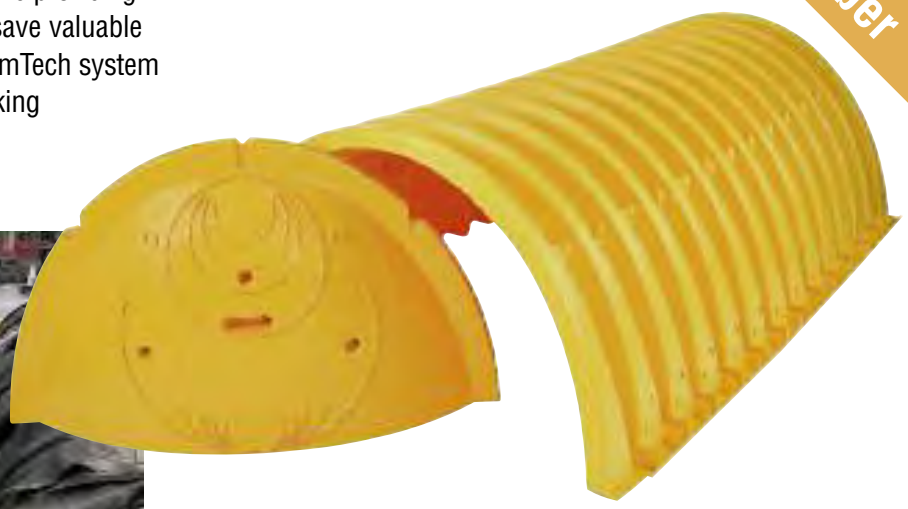
Cover ft (m)	Minimum Required Bearing Resistance for Service Loads ksf (kPa)										
	3.0 (144)	2.9 (139)	2.8 (134)	2.7 (129)	2.6 (124)	2.5 (120)	2.4 (115)	2.3 (110)	2.2 (105)	2.1 (101)	2.0 (96)
1.5 (0.46)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)
2 (0.61)	6 152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)
2.5 (0.76)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)
3 (0.91)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)
3.5 (1.07)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	12 (305)
4 (1.22)	6 152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)
4.5 (1.37)	6 152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)
5 (1.52)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)
5.5 (1.68)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	12 (305)
6 (1.83)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)
6.5 (1.98)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)
7 (2.13)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)
7.5 (2.29)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)
8 (2.44)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	15 (381)

NOTE: The design engineer is solely responsible for assessing the bearing resistance (allowable bearing capacity) of the sub-grade soils and determining the depth of foundation stone. Subgrade bearing resistance should be assessed with consideration for the range of soil moisture conditions expected under a stormwater system.

StormTech SC-740 Chamber

SC-740 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots thus maximizing land usage for commercial and municipal applications.



StormTech SC-740 Chamber (not to scale)

Nominal Chamber Specifications

Size (L x W x H)	85.4" x 51.0" x 30.0" (2170 x 1295 x 762 mm)
Chamber Storage	45.9 ft³ (1.30 m³)
Min. Installed Storage*	74.9 ft³ (2.12 m³)
Weight	74.0 lbs (33.6 kg)

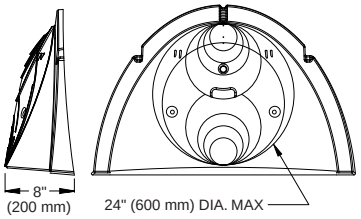
*Assumes 6" (150 mm) stone above, below and between chambers and 40% stone porosity.

Shipping

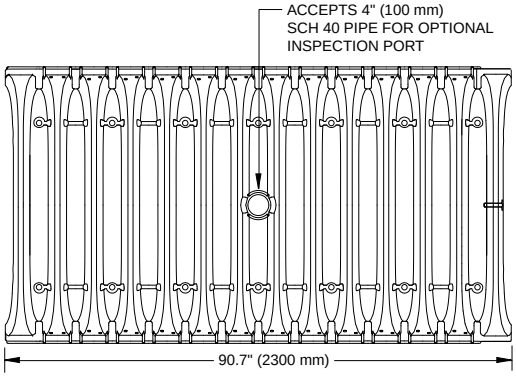
30 chambers/pallet

60 end caps/pallet

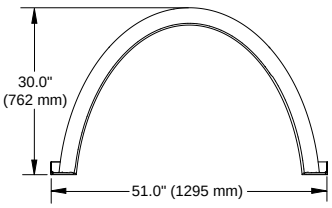
12 pallets/truck

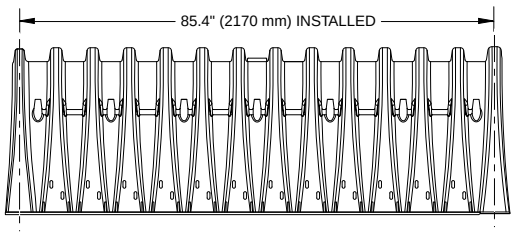


SC-740 End Cap



SC-740 Chamber





StormTech SC-740 Chamber

SC-740 Cumulative Storage Volumes Per Chamber

Assumes 40% Stone Porosity. Calculations are Based Upon a 6" (150 mm) Stone Base Under the Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage Ft³ (m³)	Total System Cumulative Storage Ft³ (m³)
42 (1067)	45.90 (1.300)	74.90 (2.121)
41 (1041)	45.90 (1.300)	73.77 (2.089)
40 (1016)	45.90 (1.300)	72.64 (2.057)
39 (991)	45.90 (1.300)	71.52 (2.025)
38 (965)	45.90 (1.300)	70.39 (1.993)
37 (948)	45.90 (1.300)	69.26 (1.961)
36 (914)	45.90 (1.300)	68.14 (1.929)
35 (889)	45.85 (1.298)	66.98 (1.897)
34 (864)	45.69 (1.294)	65.75 (1.862)
33 (838)	45.41 (1.286)	64.46 (1.825)
32 (813)	44.81 (1.269)	62.97 (1.783)
31 (787)	44.01 (1.246)	61.36 (1.737)
30 (762)	43.06 (1.219)	59.66 (1.689)
29 (737)	41.98 (1.189)	57.89 (1.639)
28 (711)	40.80 (1.155)	56.05 (1.587)
27 (686)	39.54 (1.120)	54.17 (1.534)
26 (660)	38.18 (1.081)	52.23 (1.479)
25 (635)	36.74 (1.040)	50.23 (1.422)
24 (610)	35.22 (0.977)	48.19 (1.365)
23 (584)	33.64 (0.953)	46.11 (1.306)
22 (559)	31.99 (0.906)	44.00 (1.246)
21 (533)	30.29 (0.858)	41.85 (1.185)
20 (508)	28.54 (0.808)	39.67 (1.123)
19 (483)	26.74 (0.757)	37.47 (1.061)
18 (457)	24.89 (0.705)	35.23 (0.997)
17 (432)	23.00 (0.651)	32.96 (0.939)
16 (406)	21.06 (0.596)	30.68 (0.869)
15 (381)	19.09 (0.541)	28.36 (0.803)
14 (356)	17.08 (0.484)	26.03 (0.737)
13 (330)	15.04 (0.426)	23.68 (0.670)
12 (305)	12.97 (0.367)	21.31 (0.608)
11 (279)	10.87 (0.309)	18.92 (0.535)
10 (254)	8.74 (0.247)	16.51 (0.468)
9 (229)	6.58 (0.186)	14.09 (0.399)

SC-740 Cumulative Storage Volumes Per Chamber (cont.)

Depth of Water in System Inches (mm)	Cumulative Chamber Storage Ft³ (m³)	Total System Cumulative Storage Ft³ (m³)
8 (203)	4.41 (0.125)	11.66 (0.330)
7 (178)	2.21 (0.063)	9.21 (0.264)
6 (152)	0	6.76 (0.191)
5 (127)	0	5.63 (0.160)
4 (102)	Stone Foundation 0	4.51 (0.125)
3 (76)	0	3.38 (0.095)
2 (51)	0	2.25 (0.064)
1 (25)	0	1.13 (0.032)

Note: Add 1.13 cu. ft. (0.032 m³) of storage for each additional inch (25 mm) of stone foundation.

Storage Volume Per Chamber ft³ (m³)

	Bare Chamber Storage ft³ (m³)	Chamber and Stone Stone Foundation Depth in. (mm)		
		6 (150)	12 (300)	18 (450)
StormTech SC-740	45.9 (1.3)	74.9 (2.1)	81.7 (2.3)	88.4 (2.5)

Note: Assumes 6" (150 mm) of stone above chambers, 6" (150 mm) row spacing and 40% porosity.

Amount of Stone Per Chamber

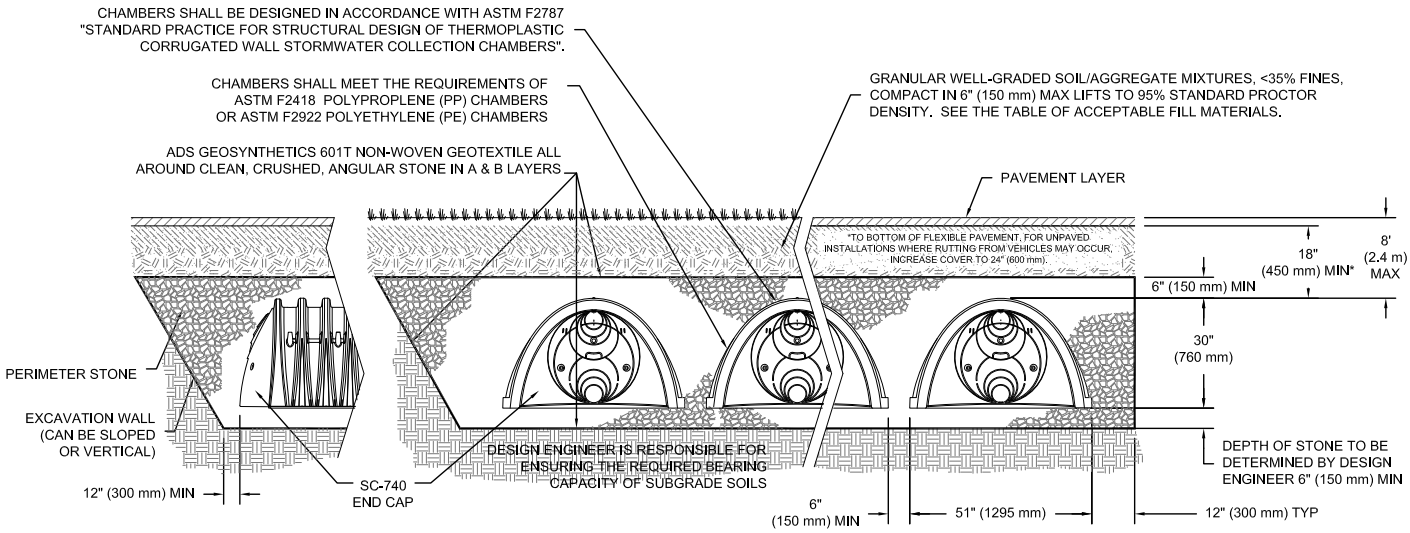
	Stone Foundation Depth		
ENGLISH TONS (yd³)	**6"**	**12"**	**18"**
StormTech SC-740	3.8 (2.8 yd³)	4.6 (3.3 yd³)	5.5 (3.9 yd³)
METRIC KILOGRAMS (m³)	**150 mm**	**300 mm**	**450 mm**
StormTech SC-740	3450 (2.1 m³)	4170 (2.5 m³)	4490 (3.0 m³)

Note: Assumes 6" (150 mm) of stone above, and between chambers.

Volume of Excavation Per Chamber yd³ (m³)

	Stone Foundation Depth		
	6" (150 mm)	**12" (300 mm)**	**18" (450 mm)**
StormTech SC-740	5.5 (4.2)	6.2 (4.7)	6.8 (5.2)

Note: Assumes 6" (150 mm) of row separation and 18" (450 mm) of cover. Volume of excavation will vary as depth of cover increases.



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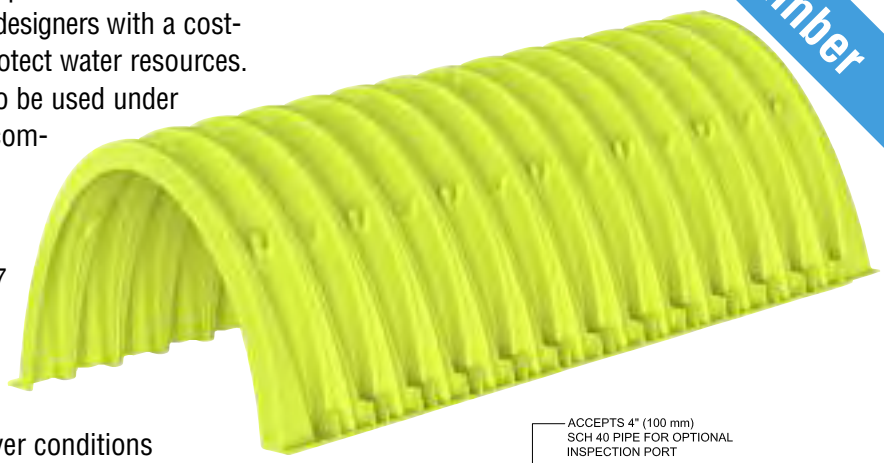
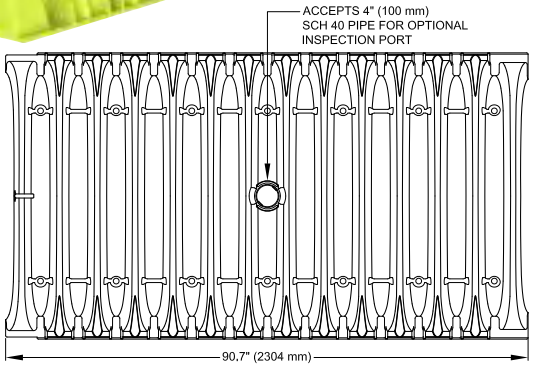
StormTech DC-780 Chamber

DC-780 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots thus maximizing land usage for commercial and municipal applications.

- 12' Deep Cover applications.
- Designed in accordance with ASTM F 2787 and produced to meet the ASTM F 2418 product standard.
- AASHTO safety factors provided for AASHTO Design Truck (H20) and deep cover conditions





StormTech DC-780 Chamber (not to scale)

Nominal Chamber Specifications

Size (L x W x H)	85.4" x 51.0" x 30.0" (2169 x 1295 x 762 mm)
Chamber Storage	46.2 ft³ (1.3 m³)
Min. Installed Storage*	78.4 ft³ (2.2 m³)

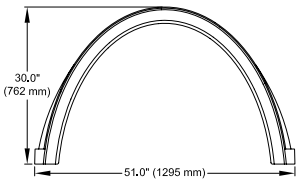
* Assumes 9" (230 mm) stone below, 6" (150 mm) stone above, 6" (150 mm) row spacing and 40% stone porosity.

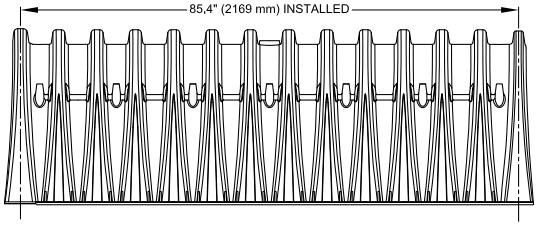
Shipping

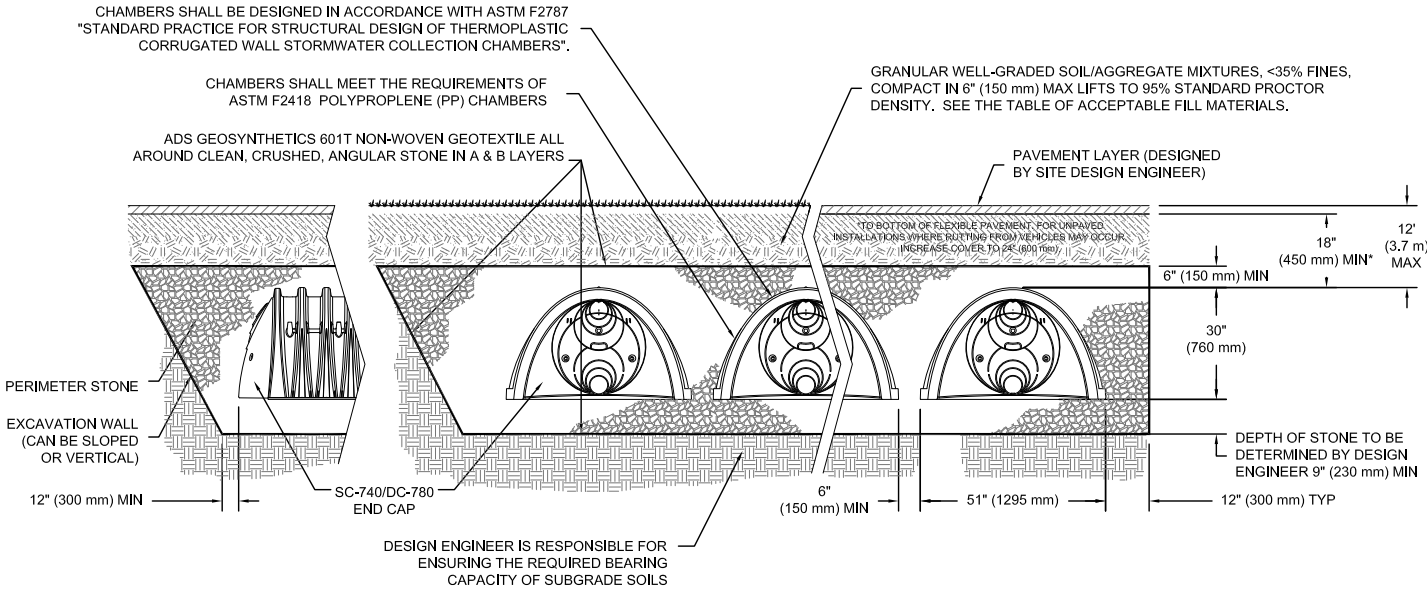
24 chambers/pallet

60 end caps/pallet

12 pallets/truck







THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS, WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.

StormTech DC-780 Chamber

DC-780 Cumulative Storage Volumes Per Chamber

Assumes 40% Stone Porosity. Calculations are Based Upon a 9" (230 mm) Stone Base Under the Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
45 (1143)	46.27 (1.310)	78.47 (2.222)
44 (1118)	46.27 (1.310)	77.34 (2.190)
43 (1092)	Stone 46.27 (1.310)	76.21 (2.158)
42 (1067)	Cover 46.27 (1.310)	75.09 (2.126)
41 (1041)	46.27 (1.310)	73.96 (2.094)
40 (1016)	46.27 (1.310)	72.83 (2.062)
39 (991)	46.27 (1.310)	71.71 (2.030)
38 (965)	46.21 (1.309)	70.54 (1.998)
37 (940)	46.04 (1.304)	69.32 (1.963)
36 (914)	45.76 (1.296)	68.02 (1.926)
35 (889)	45.15 (1.278)	66.53 (1.884)
34 (864)	44.34 (1.255)	64.91 (1.838)
33 (838)	43.38 (1.228)	63.21 (1.790)
32 (813)	42.29 (1.198)	61.43 (1.740)
31 (787)	41.11 (1.164)	59.59 (1.688)
30 (762)	39.83 (1.128)	57.70 (1.634)
29 (737)	38.47 (1.089)	55.76 (1.579)
28 (711)	37.01 (1.048)	53.76 (1.522)
27 (686)	35.49 (1.005)	51.72 (1.464)
26 (660)	33.90 (0.960)	49.63 (1.405)
25 (635)	32.24 (0.913)	47.52 (1.346)
24 (610)	30.54 (0.865)	45.36 (1.285)
23 (584)	28.77 (0.815)	43.18 (1.223)
22 (559)	26.96 (0.763)	40.97 (1.160)
21 (533)	25.10 (0.711)	38.72 (1.096)
20 (508)	23.19 (0.657)	36.45 (1.032)
19 (483)	21.25 (0.602)	34.16 (0.967)
18 (457)	19.26 (0.545)	31.84 (0.902)
17 (432)	17.24 (0.488)	29.50 (0.835)
16 (406)	15.19 (0.430)	27.14 (0.769)
15 (381)	13.10 (0.371)	24.76 (0.701)
14 (356)	10.98 (0.311)	22.36 (0.633)
13 (330)	8.83 (0.250)	19.95 (0.565)
12 (305)	6.66 (0.189)	17.52 (0.496)
11 (279)	4.46 (0.126)	15.07 (0.427)

DC-780 Cumulative Storage Volumes Per Chamber (cont.)

Depth of Water in System Inches (mm)	Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
10 (254)	2.24 (0.064)	12.61 (0.357)
9 (229)	0	10.14 (0.287)
8 (203)	0	9.01 (0.255)
7 (178)	0	7.89 (0.223)
6 (152)	0	6.76 (0.191)
5 (127)	Stone Foundation 0	5.63 (0.160)
4 (102)	0	4.51 (0.128)
3 (76)	0	3.38 (0.096)
2 (51)	0	2.25 (0.064)
1 (25)	0	1.13 (0.032)

Note: Add 1.13 cu. ft. (0.032 m³) of storage for each additional inch (25 mm) of stone foundation.

Storage Volume Per Chamber ft³ (m³)

	Bare Chamber Storage ft³ (m³)	Chamber and Stone Volume- Stone Foundation Depth inches (millimeters)		
		9 (230)	12 (300)	18 (450)
StormTech DC-780	46.2 (1.3)	78.4 (2.2)	81.8 (2.3)	88.6 (2.5)

Note: Assumes 40% porosity for the stone, the bare chamber volume, 6" (150 mm) stone above, and 6" (150 mm) row spacing.

Amount of Stone Per Chamber

	Stone Foundation Depth		
ENGLISH TONS (YD³)	9"	12"	18"
StormTech DC-780	4.2 (3.0 yd³)	4.7 (3.3 yd³)	5.6 (3.9 yd³)
METRIC KILOGRAMS (M³)	**230 mm**	**300 mm**	**450 mm**
StormTech DC-780	3810 (2.3 m³)	4264 (2.5 m³)	5080 (3.0 m³)

Note: Assumes 6" (150 mm) of stone above, and between chambers.

Volume of Excavation Per Chamber yd³ (m³)

	Stone Foundation Depth		
	9" (230 mm)	12" (300 mm)	18" (450 mm)
StormTech DC-780	5.9 (4.5)	6.3 (4.8)	6.9 (5.3)

Note: Assumes 6" (150 mm) of separation between chamber rows and 18" (450 mm) of cover. The volume of excavation will vary as the depth of the cover increases.

mm)

2.5 STORMTECH CHAMBERS

StormTech chamber systems have unique features to improve site optimization and reduce product waste. The SC-740, SC-310 and DC-780 chambers can be cut at the job site in approximately 6.5" (165 mm) increments to shorten a chamber's length. Designing and constructing chamber rows around site obstacles is easily accomplished by including specific cutting instructions or a well placed "cut to fit" note on the design plans. The last chamber of a row can be cut in any of its corrugation's valleys. An end cap placed into the trimmed corrugation's crest completes the row. The trimmed-off piece of a StormTech chamber may then be used to start the next row. See **Figure 4**.

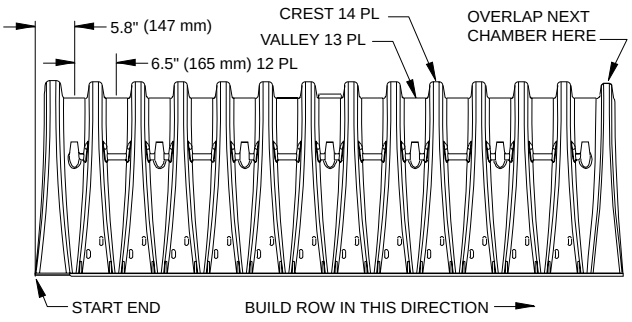
To assist the contractor, StormTech chambers are molded with simple assembly instructions and arrows that indicate the direction in which to build rows. Rows are formed by overlapping the next chamber's "Start End" corrugation with the previously laid chamber's end corrugation. Two people can safely and efficiently form rows of chambers without complicated connectors, special tools or heavy equipment.
Product Specifications: 2.2, 2.4, 2.5, 2.9 and 3.2

2.6 STORMTECH END CAPS

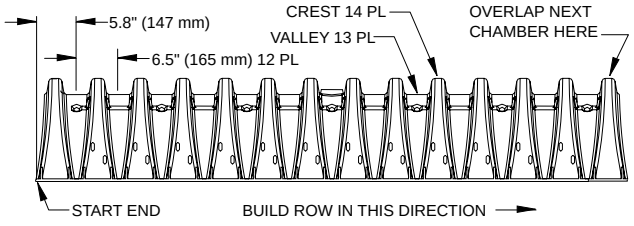
The StormTech end cap has features which make the chamber system simple to design, easy to build and more versatile than other products. StormTech end caps can be easily secured within any corrugation's crest. A molded-in handle makes attaching the end cap a one-person operation. Tools or fasteners are not required.

StormTech end caps are required at each end of a chamber row to prevent stone intrusion (two per row). The SC-740 and DC-780 end caps will accept up to a 24" (600 mm) HDPE inlet pipe. The SC-310 end cap will accept up to a 12" (300 mm) HDPE inlet pipe. See **Figure 5**.
Product Specifications: 3.1, 3.2, 3.3 and 3.4

Figure 4 – Distance Between Corrugations (not to scale)

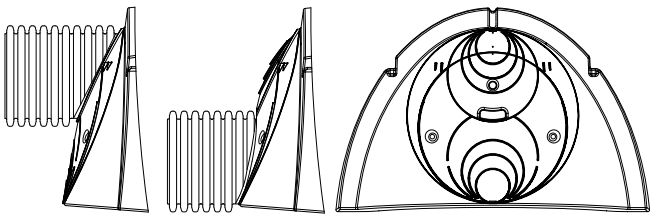


SC-740 chamber



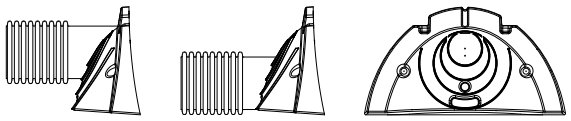
SC-310 chamber

Figure 5 – Chamber End Caps (not to scale)



SC-740/DC-780 CHAMBER FABRICATED END CAP (TOP AND BOTTOM FEED)
PIPES SIZES RANGE FROM 6" (150 mm) TO 24" (600 mm)
(INVERTS VARY WITH PIPE SIZE)

SC-740 / DC-780 end cap



SC-310 CHAMBER FABRICATED END CAP (TOP AND BOTTOM FEED)
PIPES SIZES RANGE FROM 6" (150 mm) TO 12" (300 mm)
(INVERTS VARY WITH PIPE SIZE)

SC-310 end cap

3.0 Structural Capabilities

3.1 STRUCTURAL DESIGN APPROACH

When installed per StormTech's minimum requirements, StormTech products are designed to exceed American Association of State Highway and Transportation Officials (AASHTO) LRFD recommended design factors for Earth loads and Vehicular live loads. AASHTO Vehicular live loads (previously HS-20) consist of two heavy axle configurations, that of a single 32 (142 kN) kip axle and that of tandem 25 (111 kN) kip axles. Factors for impact and multiple presences of vehicles ensure a conservative design where structural adequacy is assumed for a wide range of street legal vehicle weights and axle configurations.

Computer models of the chambers under shallow and deep conditions were developed. Utilizing design forces from computer models, chamber sections were evaluated using AASHTO procedures that consider thrust and moment, and check for local buckling capacity. The procedures also considered the time-dependent strength and stiffness properties of polypropylene and polyethylene. These procedures were developed in a research study conducted by the National Cooperative Highway Research Program (NCHRP) for AASHTO, and published as NCHRP Report 438 Recommended LRFD Specifications for Plastic Pipe and Culverts. *Product Specifications: 2.12.*

StormTech does not recommend installing StormTech products underneath buildings or parking garages. When specifying the StormTech products in close proximity to buildings, it is important to ensure that the StormTech products are not receiving any loads from these structures that may jeopardize the long term performance of the chambers.

3.2 FULL SCALE TESTING

After developing the StormTech chamber designs, the chambers were subjected to rigorous full-scale testing. The test programs verified the predicted safety factors of the designs by subjecting the chambers to more severe load conditions than anticipated during service life. Capacity under live loads and deep fill was investigated by conducting tests with a range of cover depths. Monitoring of long term deep fill installations has been done to validate the long term performance of the StormTech products.

3.3 INDEPENDENT EXPERT ANALYSIS

StormTech worked closely with the consulting firm Simpson Gumpertz & Heger Inc. (SGH) to develop and evaluate the SC-740, SC-310 and DC-780 chamber designs. SGH has world-renowned expertise in the design of buried drainage structures. The firm was the principal investigator for the NCHRP research program that developed the structural analysis and design methods adopted by AASHTO for thermoplastic culverts. SGH conducted design calculations and computer simulations of chamber performance under various installation and live load conditions. They worked with StormTech to design the full-scale test programs to verify the structural capacity of the chambers. SGH also observed all full-scale tests and inspected the chambers after completion of the tests. SGH continues to be StormTech's structural consultant.

3.4 INJECTION MOLDING

To comply with both the structural and design requirements of AASHTO's LRFD specifications and ASTM F 2787 as well as the product requirements of ASTM F 2418 or ASTM F2922, StormTech uses proprietary injection molding equipment to manufacture the chambers and end caps.

In addition to meeting structural goals, injection molding allows StormTech to design added features and advantages into StormTech's parts including:

- Precise control of wall thickness throughout parts
- Precise fit of joints and end caps
- Molded-in inspection port fitting
- Molded-in handles on end caps
- Molded-in pipe guides with blade starter slots
- Repeatability for Quality Control (See Section 3.6)

Product Specifications: 2.1, 3.1 and 3.3

3.5 POLYPROPYLENE AND POLYETHYLENE RESIN

StormTech chambers are injection molded from polypropylene and polyethylene. Polypropylene and polyethylene chambers are inherently resistant to chemicals typically found in stormwater run-off. StormTech chambers maintain a greater portion of their structural stiffness through higher installation and service temperatures.

StormTech polypropylene and polyethylene are virgin materials specially designed to achieve a high 75-year creep modulus that is necessary to provide a sound long-term structural design. Since the modulus remains high well beyond the 75-year value, StormTech chambers can exhibit a service life in excess of 75 years.

3.6 QUALITY CONTROL

StormTech chambers are manufactured under tight quality control programs. Materials are routinely tested in an environmentally controlled lab that is verified every six months via the external ASTM Proficiency Testing Program. The chamber material properties are measured and controlled with procedures following ISO 9001:2000 requirements.

Statistical Process Control (SPC) techniques are applied during manufacturing. Established upper and lower control limits are maintained on key manufacturing parameters to maintain consistent product.
Product Specifications: 2.13 and 3.6

4.0 Foundation for Chambers

4.1 FOUNDATION REQUIREMENTS

StormTech chamber systems and embedment stone may be installed in various native soil types. The sub-grade bearing capacity and chamber cover height determine the required depth of clean, crushed, angular stone for the chamber foundation. The chamber foundation is the clean, crushed, angular stone placed between the subgrade soils and the feet of the chamber.

As cover height increases (top of chamber to top of finished grade) the chambers foundation requirements increase. Foundation strength is the product of the sub-grade soils bearing capacity and the depth of clean, crushed, angular stone below the chamber foot. **Table 1** for the SC-740 and SC-310 and **Table 2** for the DC-780 specify the required minimum foundation depth for varying cover heights and subgrade bearing capacities.

4.2 WEAKER SOILS

For sub-grade soils with allowable bearing capacity less than 2000 pounds per square foot [(2.0 ksf) (96 kPa)], a geotechnical engineer should evaluate the specific conditions. These soils are often highly variable, may contain organic materials and could be more sensitive to moisture. A geotechnical engineer's recommendations may include increasing the stone foundation, improving the bearing capacity of the sub-grade soils through compaction, replacement, or other remedial measures including the use of geogrids. The use of a thermoplastic liner may also be considered for systems installed in subgrade soils that are highly affected by moisture. The project engineer is responsible for ensuring overall site settlement is within acceptable limits. A geotechnical engineer should always review installation of StormTech chambers on organic soils.

4.3 CHAMBER SPACING OPTION

StormTech always requires a minimum of 6" (150 mm) clear spacing between the feet of chambers rows for the SC-310, SC-740 and DC-780 chambers. However, increasing the spacing between chamber rows may allow the application of StormTech chambers with either less foundation stone or with weaker subgrade soils. This may be a good option where a vertical restriction on site prevents the use of a deeper foundation. Contact StormTech's Technical Service Department for more information on this option. In all cases, StormTech recommends consulting a geotechnical engineer for subgrade soils with a bearing capacity less than 2.0 ksf (96 kPa).

Table 1 – SC-310 and SC-740 Minimum Required Foundation Depth in inches (millimeters)

Cover Ht. ft. (m)	Minimum Required Bearing Resistance for Service Loads ksf (kPa)																						
	4.1 (196)	4.0 (192)	3.9 (187)	3.8 (182)	3.7 (177)	3.6 (172)	3.5 (168)	3.4 (163)	3.3 (158)	3.2 (153)	3.1 (148)	3.0 (144)	2.9 (139)	2.8 (134)	2.7 (129)	2.6 (124)	2.5 (120)	2.4 (115)	2.3 (110)	2.2 (105)	2.1 (101)	2.0 (96)
1.5 (0.46)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)
2 (0.61)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)
2.5 (0.76)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)
3 (0.91)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)
3.5 (1.07)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	18 (457)	18 (457)	21 (533)
4 (1.22)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	18 (457)	18 (457)	21 (533)
4.5 (1.37)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	18 (457)	18 (457)	21 (533)
5 (1.52)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	21 (533)
5.5 (1.68)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	21 (533)
6 (1.83)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	21 (533)	21 (533)
6.5 (1.98)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	18 (457)	21 (533)	24 (610)
7 (2.13)	6 (152)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	21 (533)	21 (533)	24 (610)
7.5 (2.29)	6 (152)	6 (152)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	21 (533)	21 (533)	24 (610)	27 (686)
8 (2.44)	6 (152)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	21 (533)	21 (533)	24 (610)	24 (610)	27 (686)

NOTE: The design engineer is solely responsible for assessing the bearing resistance (allowable bearing capacity) of the subgrade soils and determining the depth of foundation stone. Subgrade bearing resistance should be assessed with consideration for the range of soil moisture conditions expected under a stormwater system.

4.0 Foundation for Chambers/5.0 Cumulative Storage Volumes

Table 2 – DC-780 Minimum Required Foundation Depth in inches (millimeters)

Cover Ht. ft. (m)	Minimum Required Bearing Resistance for Service Loads ksf (kPa)																						
	4.1 (196)	4.0 (192)	3.9 (187)	3.8 (182)	3.7 (177)	3.6 (172)	3.5 (168)	3.4 (163)	3.3 (158)	3.2 (153)	3.1 (148)	3.0 (144)	2.9 (139)	2.8 (134)	2.7 (129)	2.6 (124)	2.5 (120)	2.4 (115)	2.3 (110)	2.2 (105)	2.1 (101)	2.0 (96)
8.5 (2.59)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	18 (457)	21 (533)	24 (610)	24 (610)	27 (686)	30 (762)
9.0 (2.74)	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	18 (457)	21 (533)	21 (533)	24 (610)	24 (610)	27 (686)	30 (762)
9.5 (2.90)	9 (229)	9 (229)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	18 (457)	21 (533)	21 (533)	24 (610)	24 (610)	27 (686)	30 (762)	33 (838)
10.0 (3.05)	9 (229)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	18 (457)	21 (533)	21 (533)	24 (610)	24 (610)	27 (686)	30 (762)	33 (838)	36 (915)
10.5 (3.20)	9 (229)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	18 (457)	21 (533)	21 (533)	24 (610)	24 (610)	27 (686)	30 (762)	30 (762)	33 (838)	36 (915)
11.0 (3.35)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	18 (457)	21 (533)	21 (533)	24 (610)	24 (610)	27 (686)	27 (686)	30 (762)	33 (838)	36 (915)	39 (991)
11.5 (3.50)	12 (305)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	18 (457)	21 (533)	21 (533)	24 (610)	24 (610)	27 (686)	27 (686)	30 (762)	33 (838)	36 (915)	39 (991)	42 (1067)
12.0 (3.66)	12 (305)	12 (305)	12 (305)	15 (381)	15 (381)	15 (381)	15 (381)	18 (457)	18 (457)	18 (457)	21 (533)	21 (533)	21 (533)	24 (610)	24 (610)	27 (686)	30 (762)	30 (762)	33 (838)	36 (915)	39 (991)	42 (1067)

NOTE: The design engineer is solely responsible for assessing the bearing resistance (allowable bearing capacity) of the subgrade soils and determining the depth of foundation stone. Subgrade bearing resistance should be assessed with consideration for the range of soil moisture conditions expected under a stormwater system.

Tables 3, 4 and **5** provide cumulative storage volumes for the SC-310, SC-740 and DC-780 chamber systems. This information may be used to calculate a detention/retention system's stage storage volume. A spreadsheet is available at www.stormtech.com in which the number of chambers can be input for quick cumulative storage calculations. *Product Specifications: 1.1, 2.2, 2.3, 2.4, and 2.6*

Table 3 - SC-310 Cumulative Storage Volumes Per Chamber
Assumes 40% Stone Porosity. Calculations are Based Upon a 6" (150 mm) Stone Base Under the Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
28 (711)	14.70 (0.416)	31.00 (0.878)
27 (686)	14.70 (0.416)	30.21 (0.855)
26 (680)	Stone 14.70 (0.416)	29.42 (0.833)
25 (610)	Cover 14.70 (0.416)	28.63 (0.811)
24 (609)	14.70 (0.416)	27.84 (0.788)
23 (584)	14.70 (0.416)	27.05 (0.766)
22 (559)	14.70 (0.416)	26.26 (0.748)
21 (533)	14.64 (0.415)	25.43 (0.720)
20 (508)	14.49 (0.410)	24.54 (0.695)
19 (483)	14.22 (0.403)	23.58 (0.668)
18 (457)	13.68 (0.387)	22.47 (0.636)
17 (432)	12.99 (0.368)	21.25 (0.602)

Table 3 - SC-310 Cumulative Storage Volumes (cont.)

Depth of Water in System Inches (mm)	Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
16 (406)	12.17 (0.345)	19.97 (0.566)
15 (381)	11.25 (0.319)	18.62 (0.528)
14 (356)	10.23 (0.290)	17.22 (0.488)
13 (330)	9.15 (0.260)	15.78 (0.447)
12 (305)	7.99 (0.227)	14.29 (0.425)
11 (279)	6.78 (0.192)	12.77 (0.362)
10 (254)	5.51 (0.156)	11.22 (0.318)
9 (229)	4.19 (0.119)	9.64 (0.278)
8 (203)	2.83 (0.081)	8.03 (0.227)
7 (178)	1.43 (0.041)	6.40 (0.181)
6 (152)	0	4.74 (0.134)
5 (127)	0	3.95 (0.112)
4 (102)	Stone 0	3.16 (0.090)
3 (76)	Foundation 0	2.37 (0.067)
2 (51)	0	1.58 (0.046)
1 (25)	0	0.79 (0.022)

Note: Add 0.79 ft³ (0.022 m³) of storage for each additional inch (25 mm) of stone foundation.

5.0 Cumulative Storage Volumes

TABLE 4 – SC-740 Cumulative Storage Volumes Per Chamber
Assumes 40% Stone Porosity. Calculations are Based Upon a 6" (150 mm) Stone Base Under the Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage Ft³ (m³)	Total System Cumulative Storage Ft³ (m³)
42 (1067)	45.90 (1.300)	74.90 (2.121)
41 (1041)	45.90 (1.300)	73.77 (2.089)
40 (1016)	Stone 45.90 (1.300)	72.64 (2.057)
39 (991)	Cover 45.90 (1.300)	71.52 (2.025)
38 (965)	45.90 (1.300)	70.39 (1.993)
37 (948)	45.90 (1.300)	69.26 (1.961)
36 (914)	45.90 (1.300)	68.14 (1.929)
35 (889)	45.85 (1.298)	66.98 (1.897)
34 (864)	45.69 (1.294)	65.75 (1.862)
33 (838)	45.41 (1.286)	64.46 (1.825)
32 (813)	44.81 (1.269)	62.97 (1.783)
31 (787)	44.01 (1.246)	61.36 (1.737)
30 (762)	43.06 (1.219)	59.66 (1.689)
29 (737)	41.98 (1.189)	57.89 (1.639)
28 (711)	40.80 (1.155)	56.05 (1.587)
27 (686)	39.54 (1.120)	54.17 (1.534)
26 (660)	38.18 (1.081)	52.23 (1.479)
25 (635)	36.74 (1.040)	50.23 (1.422)
24 (610)	35.22 (0.977)	48.19 (1.365)
23 (584)	33.64 (0.953)	46.11 (1.306)
22 (559)	31.99 (0.906)	44.00 (1.246)
21 (533)	30.29 (0.858)	41.85 (1.185)
20 (508)	28.54 (0.808)	39.67 (1.123)
19 (483)	26.74 (0.757)	37.47 (1.061)
18 (457)	24.89 (0.705)	35.23 (0.997)
17 (432)	23.00 (0.651)	32.96 (0.939)
16 (406)	21.06 (0.596)	30.68 (0.869)
15 (381)	19.09 (0.541)	28.36 (0.803)
14 (356)	17.08 (0.484)	26.03 (0.737)
13 (330)	15.04 (0.426)	23.68 (0.670)
12 (305)	12.97 (0.367)	21.31 (0.608)
11 (279)	10.87 (0.309)	18.92 (0.535)
10 (254)	8.74 (0.247)	16.51 (0.468)
9 (229)	6.58 (0.186)	14.09 (0.399)
8 (203)	4.41 (0.125)	11.66 (0.330)
7 (178)	2.21 (0.063)	9.21 (0.264)
6 (152)	0	6.76 (0.191)
5 (127)	0	5.63 (0.160)
4 (102)	Stone 0	4.51 (0.125)
3 (76)	Foundation 0	3.38 (0.095)
2 (51)	0	2.25 (0.064)
1 (25)	0	1.13 (0.032)

Note: Add 1.13 ft³ (0.032 m³) of storage for each additional inch (25 mm) of stone foundation.

Table 5 - DC-780 Cumulative Storage Volumes Per Chamber
Assumes 40% Stone Porosity. Calculations are Based Upon a 9" (230 mm) Stone Base Under the Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage Ft³ (m³)	Total System Cumulative Storage Ft³ (m³)
45 (1143)	46.27 (1.310)	78.47 (2.222)
44 (1118)	46.27 (1.310)	77.34 (2.190)
43 (1092)	Stone 46.27 (1.310)	76.21 (2.158)
42 (1067)	Cover 46.27 (1.310)	75.09 (2.126)
41 (1041)	46.27 (1.310)	73.96 (2.094)
40 (1016)	46.27 (1.310)	72.83 (2.062)
39 (991)	46.27 (1.310)	71.71 (2.030)
38 (965)	46.21 (1.309)	70.54 (1.998)
37 (940)	46.04 (1.304)	69.32 (1.963)
36 (914)	45.76 (1.296)	68.02 (1.926)
35 (889)	45.15 (1.278)	66.53 (1.884)
34 (864)	44.34 (1.255)	64.91 (1.838)
33 (838)	43.38 (1.228)	63.21 (1.790)
32 (813)	42.29 (1.198)	61.43 (1.740)
31 (787)	41.11 (1.164)	59.59 (1.688)
30 (762)	39.83 (1.128)	57.70 (1.634)
29 (737)	38.47 (1.089)	55.76 (1.579)
28 (711)	37.01 (1.048)	53.76 (1.522)
27 (686)	35.49 (1.005)	51.72 (1.464)
26 (660)	33.90 (0.960)	49.63 (1.405)
25 (635)	32.24 (0.913)	47.52 (1.346)
24 (610)	30.54 (0.865)	45.36 (1.285)
23 (584)	28.77 (0.815)	43.18 (1.223)
22 (559)	26.96 (0.763)	40.97 (1.160)
21 (533)	25.10 (0.711)	38.72 (1.096)
20 (508)	23.19 (0.657)	36.45 (1.032)
19 (483)	21.25 (0.602)	34.16 (0.967)
18 (457)	19.26 (0.545)	31.84 (0.902)
17 (432)	17.24 (0.488)	29.50 (0.835)
16 (406)	15.19 (0.430)	27.14 (0.769)
15 (381)	13.10 (0.371)	24.76 (0.701)
14 (356)	10.98 (0.311)	22.36 (0.633)
13 (330)	8.83 (0.250)	19.95 (0.565)
12 (305)	6.66 (0.189)	17.52 (0.496)
11 (279)	4.46 (0.126)	15.07 (0.427)
10 (254)	2.24 (0.064)	12.61 (0.357)
9 (229)	0	10.14 (0.287)
8 (203)	0	9.01 (0.255)
7 (178)	Stone 0	7.89 (0.223)
6 (152)	Foundation 0	6.76 (0.191)
5 (127)	0	5.63 (0.160)
4 (102)	0	4.51 (0.128)
3 (76)	0	3.38 (0.096)
2 (51)	0	2.25 (0.064)
1 (25)	0	1.13 (0.032)

Note: Add 1.13 cu. ft. (0.032 m³) of storage for each additional inch (25 mm) of stone foundation.

6.1 CHAMBER ROW SEPARATION

StormTech SC-740, SC-310 and DC-780 chambers must be specified with a minimum 6" (150 mm) space between the feet of adjacent parallel chamber rows. Increasing the space between rows is acceptable. This will increase the storage volume due to additional stone voids.

6.2 STONE SURROUNDING CHAMBERS

Refer to **Table 6** for acceptable stone materials. StormTech requires clean, crushed, angular stone below, between and above chambers as shown in **Figure 6**. Acceptable gradations are listed in **Table 6.** Subrounded and rounded stone are not acceptable.

6.3 GEOTEXTILE SEPARATION REQUIREMENT

A non-woven geotextile that meets AASHTO M288 Class 2 Separation requirements must be applied as a separation layer to prevent soil intrusion into the clean, crushed, angular stone as shown in **Figure 6**. The geotextile is required between the clean, crushed, angular stone and the subgrade soils, the excavation's sidewalls and the fill materials. The geotextile should completely envelope the clean, crushed, angular stone. Overlap adjacent geotextile rolls per AASHTO M288 separation guidelines. Contact StormTech for a list of acceptable geotextiles.

6.4 FILL ABOVE CHAMBERS

Refer to **Table 6** and **Figure 6** for acceptable fill material above the 6" (150 mm) of clean, crushed, angular stone. Minimum and maximum fill requirements for the SC-740, SC-310 and DC-780 chambers are shown in **Figure 6** below. StormTech requires a minimum of 24" (600 mm) of fill in non-paved installations where rutting from vehicles may occur. **Table 6** provides details on soil class and compaction requirements for suitable fill materials.

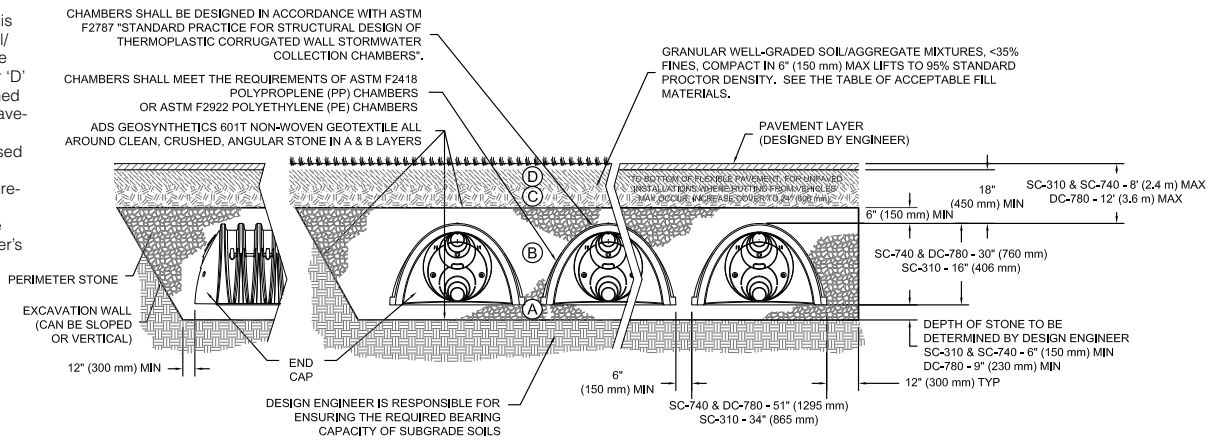
Table 6 – Acceptable Fill Materials

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2] [3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.

Figure 6 – Fill Material Locations

Once layer 'C' is placed any soil/material can be placed in layer 'D' up to the finished grade. Most pavement subbase soils can be used to replace the materials requirements of layer 'C' or 'D' at the design engineer's discretion.



7.0 Inletting the Chambers

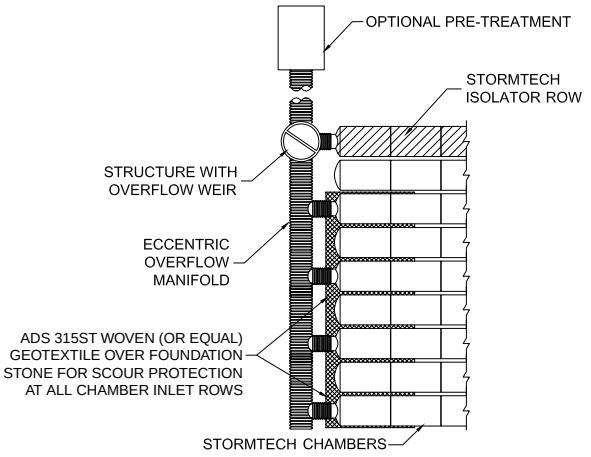
The design flexibility of a StormTech chamber system includes many inletting possibilities. Contact StormTech's Technical Service Department for guidance on designing an inlet system to meet specific site goals.

7.1 TREATMENT TRAIN

A properly designed inlet system can ensure good water quality, easy inspection and maintenance, and a long system service life. StormTech recommends a treatment train approach for inletting an underground stormwater management system under a typical commercial parking area. *Treatment train* is an industry term for a multi-tiered water quality network. As shown in **Figure 7**, a StormTech recommended inlet system can inexpensively have tiers of treatment upstream of the StormTech chambers:

Tier 1 – Pre-treatment (BMP)
Tier 2 - StormTech Isolator® Row
Tier 3 - Enhanced Treatment (BMP)

Figure 7 – Typical StormTech Treatment Train Inlet System



7.2 PRE-TREATMENT (BMP) – TREATMENT TIER 1

In some areas pre-treatment of the stormwater is required prior to entry into a stormwater system. By treating the stormwater prior to entry into the system, the service life of the system can be extended, pollutants such as hydrocarbons may be captured, and local regulations met. Pre-treatment options are often described as a Best Management Practice or simply a BMP.

Pre-treatment devices differ greatly in complexity, design and effectiveness. Depending on a site's characteristics and treatment goals, the simple, least expensive pre-treatment solutions can sometimes be just as effective as the complex systems. Options include a simple deep sumped manhole with a 90° bend on its outlet, baffle boxes, swirl concentrators, and devices that combine these processes. Some of the most effective pre-treatment options combine engineered site grading with vegetation such as bio-swales or grassy strips.

The type of pretreatment device specified as the first level of treatment up-stream of a StormTech chamber system can vary greatly throughout the country and from site-to-site. It is the responsibility of the design engineer to understand the water quality requirements and design a stormwater treatment system that will satisfy local regulators and follow applicable laws. A design engineer should apply their understanding of local weather conditions, site topography, local maintenance requirements, expected service life, etc…to select an appropriate stormwater pre-treatment system.

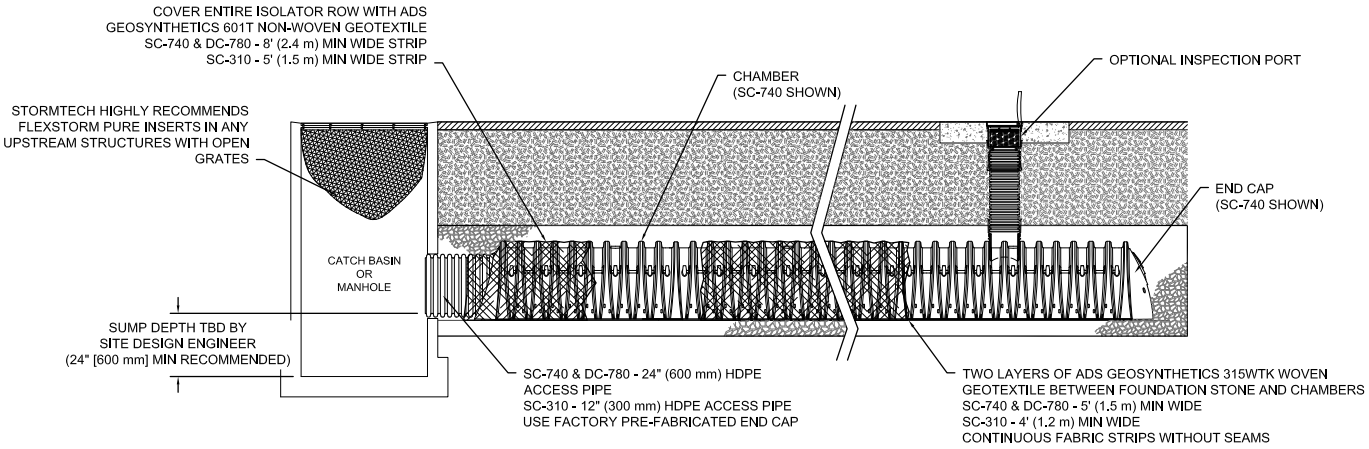
7.3 STORMTECH ISOLATOR ROW – TREATMENT TIER 2

StormTech has a patented technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance. The StormTech Isolator Row is a row of standard StormTech chambers surrounded with appropriate filter fabrics and connected to a manhole for easy access. This application basically creates a filter/detention basin that allows water to egress through the surrounding filter fabric while sediment is trapped within. It may be best to think of the Isolator Row as a first-flush treatment device. *First-Flush* is a term typically used to describe the first ½" to 1" (13-25 mm) of rainfall or runoff on a site. The majority of stormwater pollutants are carried in the sediments of the first-flush, therefore the Isolator Row is an effective component of a treatment train.

The StormTech Isolator Row should be designed with a manhole with an overflow weir at its upstream end. The diversion manhole is multi-purposed. It can provide access to the Isolator Row for both inspection and maintenance and acts as a diversion structure. The manhole is connected to the Isolator Row with a short length of 12" (300 mm) pipe for the SC-310 chamber and 24" (600 mm) pipe for the SC-740 and DC-780 chambers. These pipes are connected to the Isolator Row with a 12" (300 mm) fabricated end cap for the SC-310 chamber and a 24" (600 mm) fabricated end cap for the SC-740 and DC-780 chambers. The overflow weir typically has its crest set between the top of the chamber and its midpoint. This allows stormwater in excess of the Isolator Row's storage/conveyance capacity to bypass into the chamber system through the downstream manifold system.

Specifying and installing proper geotextiles is essential for efficient operation and to prevent damage to the system during the JetVac maintenance process. In a typical configuration, two strips of woven geotextile that meet AASHTO M288 Class 1 requirements are required between the chambers and the stone foundation. This strong filter fabric traps sediments and protects the stone base during maintenance. A strip of non-woven

Figure 8 – StormTech Isolator Row Detail



Note: Non-woven geotextile over DC-780 Isolator Row chambers is not required.

AASHTO M288 Class 2 geotextile is draped over the Isolator chamber row. This 6-8 oz. (217-278 g/m^2) non-woven filter fabric prevents sediments from migrating out of the chamber perforations while allowing modest amounts of water to flow out of the Isolator Row. **Figure 8** is a detail of the Isolator Row that shows proper application of the geotextiles. Contact StormTech for a table of acceptable geotextiles.

Inspection is easily accomplished through the upstream manhole or optional inspection ports. Maintenance of an Isolator Row is fast and easy using the JetVac process through the upstream manhole. Section 12.0 explains the inspection and maintenance process in more detail.

Isolator Rows can be sized to accommodate either a water quality volume or a water quality flow rate requirement. The use of filter fabric around the Isolator Row chambers allows stormwater to egress out of the row during and between storm events. The rate of egression for design is dependent upon the chamber model and sediment accumulation on the geotextile. Contact StormTech's Technical Services Department for more information on Isolator Row sizing.

7.4 ENHANCED TREATMENT (BMP) – TREATMENT TIER 3

As regulations have become more stringent, requiring higher levels of containment removal, water quality systems may be required to treat higher flow rates, greater volumes or to provide a higher level of filtration or other more sophisticated treatment process. StormTech systems can easily be configured with enhanced treatment techniques located either upstream or down stream of the retention or detention chamber system. Located upstream of an infiltration bed, between the pretreatment device and the Isolator Row, enhanced treatment provides a high level of contaminant removal which protects groundwater or better preserves the infiltration surface. Located downstream of detention, enhanced treatment provides a higher level of contaminant removal prior to discharge to a receiving body.

Enhanced treatment BMPs are normally applied where specific regulations and specific water quality product approvals are in place. StormTech works closely with providers of enhanced treatment technologies to meet local requirements.

7.5 TREATMENT TRAIN CONCLUSION

The treatment train is a highly effective water-quality approach that may not add significant cost to a StormTech system being installed under commercial parking areas. The StormTech Isolator Row adds a significant level of treatment, easy inspection and maintenance, while maintaining storage volume credit for the cost of a modest amount of geotextile. Finally where higher levels of treatment are required, StormTech can integrate other technologies into the treatment train to provide the most cost effective treatment approach. This treatment train concept provides three levels of treatment, inspection and maintenance upstream and downsstream of the StormTech detention/retention bed.

7.0 Inletting the Chambers

7.6 OTHER INLET OPTIONS

While the three-tiered treatment train approach is the recommended method of inletting StormTech chambers for typical under-commercial parking applications, there are other effective inlet methods that may be considered. For instance, Isolator Rows, while adding an inexpensive level of confidence, are not always necessary. A header system with fewer inlets can be designed to further minimize the cost of a StormTech system. There may be applications where stormwater pre-treatment may not be necessary at all and the system can be inlet directly from the source. Contact StormTech's Technical Service Department to discuss inlet options.

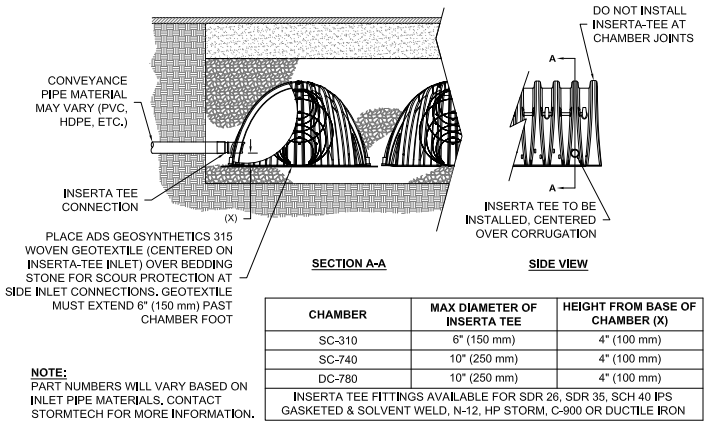
7.7 LATERAL FLOW RATES

The embedment stone surrounding the StormTech chambers allows the rapid conveyance of stormwater between chamber rows. Stormwater will rise and fall evenly within a bed of chambers. A single StormTech SC-740 chamber is able to release or accept stormwater at a rate of at least 0.5 cfs (14.2 l/s) through the surrounding stone.

7.8 INLETTING PERPENDICULAR TO A ROW OF CHAMBERS WITH INSERTA TEE

There is an easy, inexpensive method to perpendicularly inlet a row of chambers. Simply connect the inlet directly to the chamber with an Inserta Tee. **Figure 9** shows a typical detail along with the standard sizes offered for each chamber model.

Figure 9 – Inserta Tee Detail



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

7.9 MAXIMUM INLET PIPE VELOCITIES TO PREVENT SCOURING OF THE STONE FOUNDATION

The primary function of the inlet manifold is to convey and distribute flows to a sufficient number of rows in the chamber bed such that there is ample conveyance capacity to pass the peak flows without creating an unacceptable backwater condition in upstream piping or scour the foundation stone under the chambers.

Manifolds are connected to the end caps either at the top or bottom of the end cap. High inlet flow rates from either connection location produce a shear scour potential of the foundation stone. Inlet flows from top inlets also produce impingement scour potential. Scour potential is reduced when standing water is present over the foundation stone. However, for safe design across the wide range of applications, StormTech assumes minimal standing water at the time the design flow occurs.

To minimize scour potential, StormTech recommends the installation of woven scour protection fabric at each inlet row. This enables a protected transition zone from the concentrated flow coming out of the inlet pipe to a uniform flow across the entire width of the chamber for both top and bottom connections. Allowable flow rates for design are dependent upon: the elevation of inlet pipe, foundation stone size and scour protection. An appropriate scour protection geotextile is installed from the end cap to at least 10.5' (3.2 m) for the SC-310, SC-740 and DC 780 chambers for both top and bottom feeding inlet pipes.

See StormTech's Tech Sheet #7 for guidance on manifold sizing. ADS's Technical Services department can also assist with sizing inlet manifolds for the StormTech chamber systems.

Table 7A – Standard distances from base of chamber to invert of inlet and outlet manifolds on StormTech end caps.

SC-310 ENDCAPS				
	PIPE DIA.	**INV. (IN)**	**INV. (FT)**	**INV. (MM)**
TOP	6" (150 mm)	5.8"	0.48	146
	8" (200 mm)	3.5"	0.29	88
	10" (250 mm)	1.4"	0.12	37
BOTTOM	6" (150 mm)	0.5"	0.04	12
	8" (200 mm)	0.6"	0.05	15
	10" (250 mm)	0.7"	0.06	18
	12" (300 mm)	0.9"	0.08	24

SC-740 / DC-780 ENDCAPS				
	PIPE DIA.	**INV. (IN)**	**INV. (FT)**	**INV. (MM)**
TOP	6" (150 mm)	18.5"	1.54	469
	8" (200 mm)	16.5"	1.38	421
	10" (250 mm)	14.5"	1.21	369
	12" (300 mm)	12.5"	1.04	317
	15" (375 mm)	9"	0.75	229
	18" (450 mm)	5"	0.42	128
BOTTOM	6" (150 mm)	0.5"	0.04	12
	8" (200 mm)	0.6"	0.05	15
	10" (250 mm)	0.7"	0.06	18
	12" (300 mm)	1.2"	0.10	30
	15" (375 mm)	1.3"	0.11	34
	18" (450 mm)	1.6"	0.13	40
	24" (600 mm)	0.1"	0.01	3

See StormTech's Tech Sheet #7 for manifold sizing guidance

8.0 OUTLETS FOR STORMTECH CHAMBER SYSTEMS

The majority of StormTech installations are detention systems and have some type of outlet structure. An outlet manifold is generally designed to ensure that peak flows can be conveyed to the outlet structure.

To drain the system completely, an underdrain system is located at or below the bottom of the foundation stone. Some beds may be designed with a pitched base to ensure complete drainage of the system. A grade of ½% is usually satisfactory.

An outlet pipe may be located at a higher invert within a bed. This allows a designed volume of water to infiltrate while excess volumes are outlet as necessary. This is an excellent method of recharging groundwater, replicating a site's pre-construction hydraulics.

Depending on the bed layout and inverts, outlet pipes should be placed in the embedment stone along the bed's perimeter as shown in **Figures 10** and **11**. Solid outlet pipes should also be used to penetrate the StormTech end caps at the designed outlet invert as shown in **Figure 12**. An Isolator Row should not be directly penetrated with an outlet pipe. For systems requiring higher outlet flow rates, a combination of connections may be utilized as shown in **Figure 13**.

In detention and retention applications the discharge of water from the stormwater management system is determined based on the hydrology of the area and the hydraulic design of the system. It is the design engineer's responsibility to design an outlet system that meets their hydraulic objectives while following local laws and regulations.

Table 7B – Maximum outlet flow rate capacities from StormTech manifolds.

OUTLET FLOW		
PIPE DIA.	**FLOW (CFS)**	**FLOW (L/S)**
6" (150 mm)	0.4	11.3
8" (200 mm)	0.7	19.8
10" (250 mm)	1.0	28.3
12" (300 mm)	2.0	56.6
15" (375 mm)	2.7	76.5
18" (450 mm)	4.0	113.3
24" (600 mm)	7.0	198.2
30" (750 mm)	11.0	311.5
36" (900 mm)	16.0	453.1
42" (1050 mm)	22.0	623.0
48" (1200 mm)	28.0	792.9

Figure 10 – Underdrain Parallel

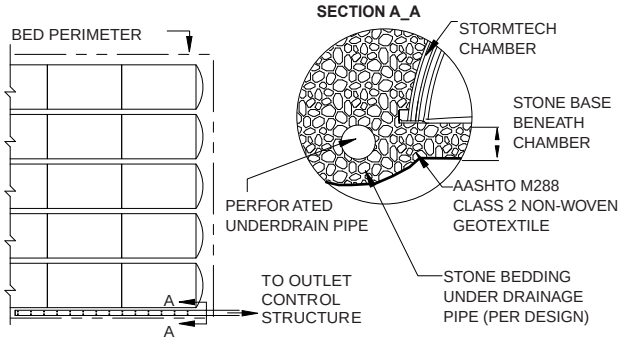


Figure 11 – Underdrain Perpendicular

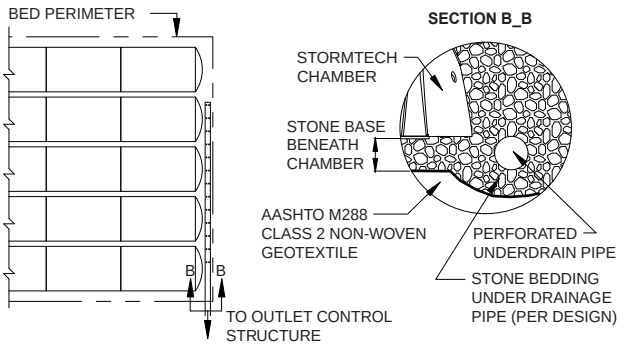


Figure 12 – Outlet Manifold

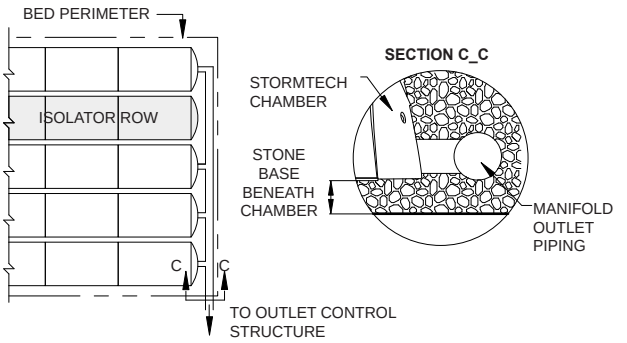
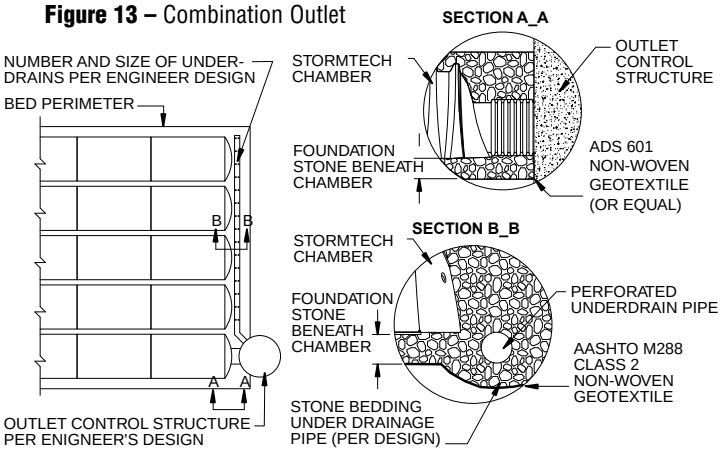


Figure 13 – Combination Outlet



9.1 EROSION CONTROL

Erosion and sediment control measures must be integrated into the plan to protect the stormwater system both during and after construction. These practices may have a direct impact on the system's infiltration performance and longevity. Vegetation, temporary sediment barriers (silt fences, hay bales, fabric-wrapped catch basin grates), and strategic stormwater runoff management may be used to control erosion and sedimentation. StormTech recommends the use of pipe plugs on the inlet pipe until the system is in service.

9.2 SITE IMPROVEMENT TECHNIQUES

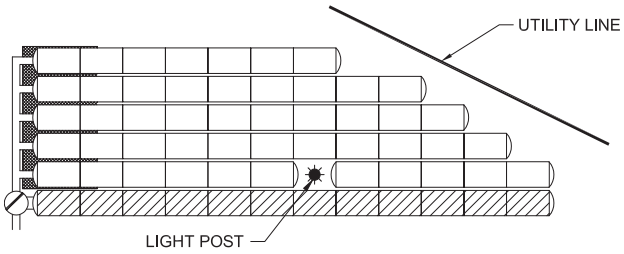
When site conditions are less than optimal, StormTech recognizes many methods for improving a site for construction. Some techniques include the removal and replacement of poor materials, the use of engineered subgrade materials, aggregates, chemical treatment, and mechanical treatments including the use of geosynthetics. StormTech recommends referring to AASHTO M 288 guidelines for the appropriate use of geotextiles.

StormTech also recognizes geogrid as a potential component of an engineered solution to improve site conditions or as a construction tool for the experienced contractor. StormTech chamber systems are compatible with the use of geosynthetics. The use of geosynthetics or any other site improvement method does not eliminate or modify any of StormTech's requirements. **It is the ultimate responsibility of the design engineer to ensure that site conditions are suitable for a StormTech chamber system.**

9.3 CONFORMING TO SITE CONSTRAINTS

StormTech chambers have the unique ability to conform to site constraints such as utility lines, light posts, large trees, etc. Rows of chambers can be ended short or interrupted by placing an end cap at the desired location, leaving the required number of chambers out of the row to get by the obstruction, then starting the row of chambers again with another end cap. See **Figure 14** for an example.

Figure 14 – Ability to Conform to Site Constraints



9.4 LINERS

StormTech chambers offer the distinct advantage and versatility that allow them to be designed as an open bottom detention or retention system. In fact, the vast majority of StormTech installations and designs are open bottom detention systems. Using an open bottom system enables treatment of the storm water through the underlying soils and provides a volume safety factor based on the infiltrative capacity of the underlying soils.

In some applications, however, open bottom detention systems may not be allowed. StormTech's Tech Sheet #2 provides guidance for the design and installation of thermoplastic liners for detention systems using StormTech chambers. The major points of the memo are:

- Infiltration of stormwater is generally a desirable stormwater management practice, often required by regulations. Lined systems should only be specified where unique site conditions preclude significant infiltration.
- Thermoplastic liners provide cost effective and viable means to contain stormwater in StormTech subsurface systems where infiltration is undesirable.
- PVC and LLDPE are the most cost effective, installed membrane materials.
- Enhanced puncture resistance from angular aggregate on the water side and from protrusions on the soil side can be achieved by placing a non-woven geotextile reinforcement on each side of the geomembrane. A sand underlayment in lieu of the geotextile reinforcement on the soil side may be considered when cost effective.
- StormTech does not design, fabricate, sell or install thermoplastic liners. StormTech recommends consulting with liner professionals for final design and installation advice.

Figure 15 – Chamber bed placed around light post.

For quick calculations, refer to the Site Calculator on StormTech's website at ***www.stormtech.com****.*

10.1 SYSTEM SIZING

The following steps provide the calculations necessary to size a system. If you need assistance determining the number of chambers per row or customizing the bed configuration to fit a specific site, call StormTech's Technical Services Department at **1-888-892-2694.**

1) Determine the amount of storage volume (V_S) required.

It is the design engineer's sole responsibility to determine the storage volume required by local codes.

TABLE 8 – Storage Volume Per Chamber ft³ (m³)

	Bare Chamber Storage	Chamber and Stone Foundation Depth in. (mm)		
	ft³ (m³)	6 (150)	12 (300)	18 (450)
StormTech SC-740	45.9 (1.3)	74.9 (2.1)	81.7 (2.3)	88.4 (2.5)
StormTech SC-310	14.7 (0.4)	31.0 (0.9)	35.7 (1.0)	40.4 (1.1)
	ft³ (m³)	**9 (230)**	**12 (300)**	**18 (450)**
StormTech DC-780	46.2 (1.3)	78.4 (2.2)	81.8 (2.3)	88.6 (2.5)

Note: Assumes 40% porosity for the stone plus the chamber volume.

2) Determine the number of chambers (C) required.

To calculate the number of chambers needed for adequate storage, divide the storage volume (Vs) by the volume of the selected chamber, as follows:
C = Vs / Volume per Chamber

3) Determine the required bed size (S).

To find the size of the bed, multiply the number of chambers needed (C) by either:

StormTech SC-740 / DC-780
bed area per chamber = 33.8 ft² (3.1 m²)

StormTech SC-310
bed area per chamber = 23.7 ft² (2.2 m²)

S = (C x bed area per chamber) +
[1 foot (0.3 m) x bed perimeter in feet (meters)]

NOTE: It is necessary to add one foot (0.3 m) around the perimeter of the bed for end caps and working space.

4) Determine the amount of clean, crushed, angular stone (Vst) required.

TABLE 9 – Amount of Stone Per Chamber

	Stone Foundation Depth		
ENGLISH tons (yd³)	6"	12"	18"
StormTech SC-740	3.8 (2.8)	4.6 (3.3)	5.5 (3.9)
StormTech SC-310	2.1 (1.5)	2.7 (1.9)	3.4 (2.4)
METRIC kg (m³)	**150 mm**	**300 mm**	**450 mm**
StormTech SC-740	3450 (2.1)	4170 (2.5)	4490 (3.0)
StormTech SC-310	1830 (1.1)	2490 (1.5)	2990 (1.8)
ENGLISH tons (yd³)	**9"**	**12"**	**18"**
StormTech DC-780	4.2 (3.0)	4.7 (3.3)	5.6 (3.9)
METRIC kg (m³)	**230 mm**	**300 mm**	**450 mm**
StormTech DC-780	3810 (2.3)	4264 (2.5)	5080 (3.0)

Note: Assumes 6" (150 mm) of stone above, and between chambers.

To calculate the total amount of clean, crushed, angular stone required, multiply the number of chambers (C) by the selected weight of stone from **Table 9.**
NOTE: Clean, crushed, angular stone is also required around the perimeter of the system.

5) Determine the volume of excavation (Ex) required.
6) Determine the area of filter fabric (F) required.

TABLE 10 – Volume of Excavation Per Chamber yd³ (m³)

	Stone Foundation Depth		
	6" (150 mm)	12" (300 mm)	18" (450 mm)
StormTech SC-740	5.5 (4.2)	6.2 (4.7)	6.8 (5.2)
StormTech SC-310	2.9 (2.2)	3.4 (2.6)	3.8 (2.9)
	9" (230 mm)	**12" (300 mm)**	**18" (457 mm)**
StormTech DC-780	5.9 (4.5)	6.3 (4.8)	6.9 (5.3)

Note: Assumes 6" (150 mm) of separation between chamber rows and 18" (450 mm) of cover. The volume of excavation will vary as the depth of the cover increases.

Each additional foot of cover will add a volume of excavation of 1.3 yds³ (1.0 m³) per SC-740 / DC-780 and 0.9 yds³ (0.7 m³) per SC-310 chamber.

The bottom and sides of the bed and the top of the embedment stone must be covered with ADS 601 (or equal) a non-woven geotextile (filter fabric). The area of the sidewalls must be calculated and a 2 foot (0.6 m) overlap must be included where two pieces of filter fabric are placed side-by-side or end-to-end. Geotextiles typically come in 15 foot (4.6 m) wide rolls.

7) Determine the number of end caps (E_C) required.

Each row of chambers requires two end caps.
E_C = number of rows x 2

11.0 Detail Drawings

Figure 16 – Inspection Port Detail

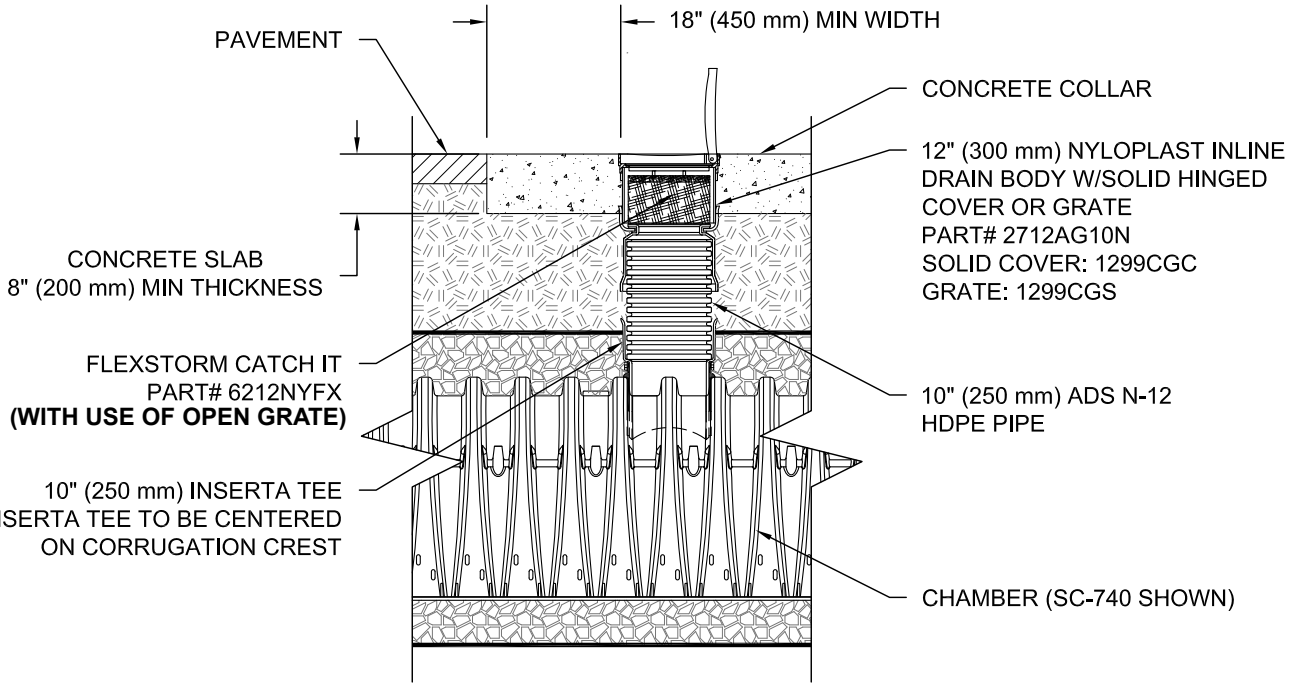
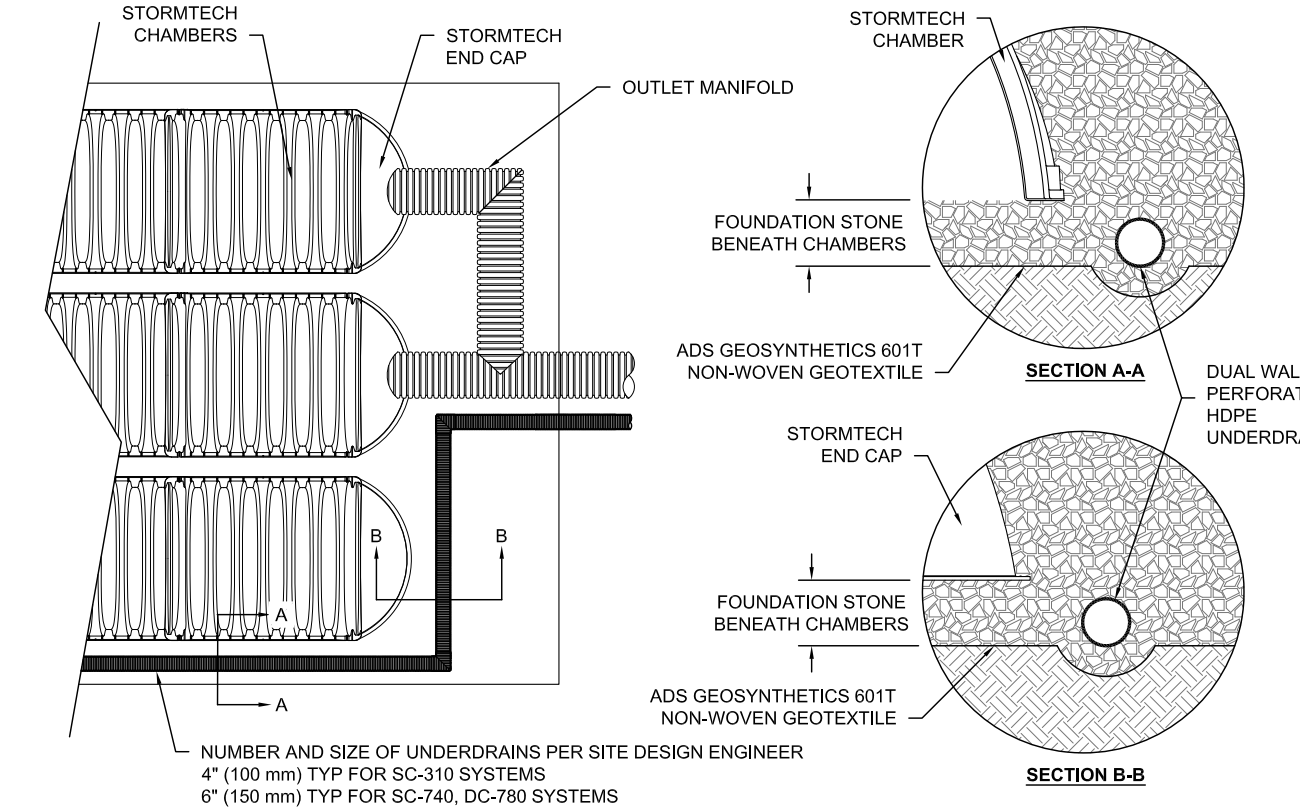


Figure 17 – Under Drain Detail



12.1 ISOLATOR ROW INSPECTION

Regular inspection and maintenance are essential to assure a properly functioning stormwater system. Inspection is easily accomplished through the manhole or optional inspection ports of an Isolator Row. Please follow local and OSHA rules for a confined space entry.

Inspection ports can allow inspection to be accomplished completely from the surface without the need for a confined space entry. Inspection ports provide visual access to the system with the use of a flashlight. A stadia rod may be inserted to determine the depth of sediment. If upon visual inspection it is found that sediment has accumulated to an average depth exceeding 3" (76 mm), cleanout is required.

A StormTech Isolator Row should initially be inspected immediately after completion of the site's construction. While every effort should be made to prevent sediment from entering the system during construction, it is during this time that excess amounts of sediments are most likely to enter any stormwater system. Inspection and maintenance, if necessary, should be performed prior to passing responsibility over to the site's owner. Once in normal service, a StormTech Isolator Row should be inspected bi-annually until an understanding of the sites characteristics is developed. The site's maintenance manager can then revise the inspection schedule based on experience or local requirements.

12.2 ISOLATOR ROW MAINTENANCE

JetVac maintenance is recommended if sediment has been collected to an average depth of 3" (76 mm) inside the Isolator Row. More frequent maintenance may be required to maintain minimum flow rates through the Isolator Row. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, a wave of suspended sediments is flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/ JetVac combination vehicles. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" (1143 mm) are best. The JetVac process shall only be performed on StormTech Rows that have AASHTO class 1 woven geotextile over the foundation stone (ADS 315ST or equal).

Looking down the Isolator Row.

A typical JetVac truck. (This is not a StormTech product.)

Examples of culvert cleaning nozzles appropriate for Isolator Row maintenance. (These are not StormTech products.)

12.0 Inspection & Maintenance

STORMTECH ISOLATOR™ ROW - STEP-BY-STEP MAINTENANCE PROCEDURES

Step 1) Inspect Isolator Row for sediment

A) Inspection ports (if present)

i. Remove lid from floor box frame

ii. Remove cap from inspection riser

iii. Using a flashlight and stadia rod, measure depth of sediment

iv. If sediment is at, or above, 3" (76 mm) depth proceed to Step 2. If not proceed to Step 3.

B) All Isolator Rows

i. Remove cover from manhole at upstream end of Isolator Row

ii. Using a flashlight, inspect down Isolator Row through outlet pipe

1. Follow OSHA regulations for confined space entry if entering manhole

2. Mirrors on poles or cameras may be used to avoid a confined space entry

iii. If sediment is at or above the lower row of sidewall holes [approximately 3" (76 mm)] proceed to Step 2. If not proceed to Step 3.

Step 2) Clean out Isolator Row using the JetVac process

A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45" (1143 mm) or more is preferable

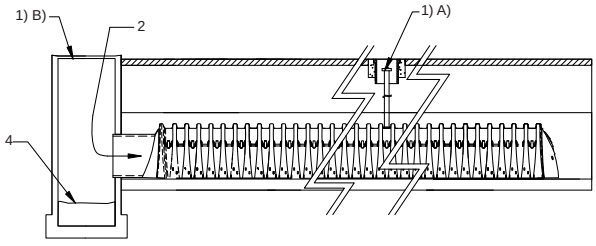
B) Apply multiple passes of JetVac until back-flush water is clean

C) Vacuum manhole sump as required during jetting

Step 3) Replace all caps, lids and covers

Step 4) Inspect and clean catch basins and manholes upstream of the StormTech system following local guidelines.

Figure 20 – StormTech Isolator Row (not to scale)



12.3 ECCENTRIC PIPE HEADER INSPECTION

Theses guidelines do not supercede a pipe manufacturer's recommended I&M procedures. Consult with the manufacturer of the pipe header system for specific I&M procedures. Inspection of the header system should be carried out quarterly. On sites which generate higher levels of sediment more frequent inspections may be necessary. Headers may be accessed through risers, access ports or manholes. Measurement of sediment may be taken with a stadia rod or similar device. Clean-out of sediment should occur when the sediment volume has reduced the storage area by 25% or the depth of sediment has reached approximately 25% of the diameter of the structure.

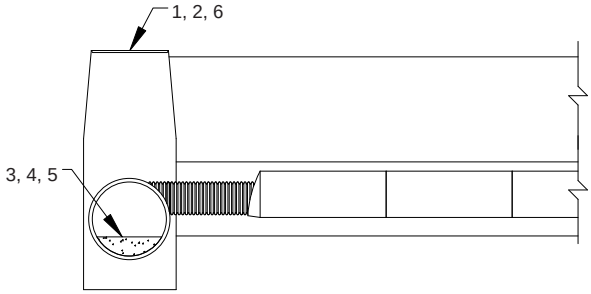
12.4 ECCENTRIC PIPE MANIFOLD MAINTENANCE

Cleanout of accumulated material should be accomplished by vacuum pumping the material from the header. Cleanout should be accomplished during dry weather. Care should be taken to avoid flushing sediments out through the outlet pipes and into the chamber rows.

Eccentric Header Step-by-Step Maintenance Procedures

1. Locate manholes connected to the manifold system
2. Remove grates or covers
3. Using a stadia rod, measure the depth of sediment
4. If sediment is at a depth of about 25% pipe volume or 25% pipe diameter proceed to step 5. If not proceed to step 6.
5. Vacuum pump the sediment. Do not flush sediment out inlet pipes.
6. Replace grates and covers
7. Record depth and date and schedule next inspection

Figure 21 – Eccentric Manifold Maintenance



Please contact StormTech's Technical Services Department at 888-892-2894 for a spreadsheet to estimate cleaning intervals.

13.0 General Notes

1. StormTech ("StormTech") requires installing contractors to use and understand StormTech's latest Installation Instructions prior to beginning system installation.
2. Our Technical Services Department offers installation consultations to installing contractors. Contact our Technical Service Representatives at least 30 days prior to system installation to arrange a pre-installation consultation. Our representatives can then answer questions or address comments on the StormTech chamber system and inform the Installing contractor of the minimum installation requirements before beginning the system's construction. Call **860-529-8188** to speak to a Technical Service Representative or visit **www.stormtech.com** to receive a copy of our Installation Instructions.
3. StormTech's requirements for systems with pavement design (asphalt, concrete pavers, etc.): Minimum cover for the SC-740, DC-780 and SC-310 chambers is 18" (457 mm) not including pavement; Maximum cover for the SC-740 and SC-310 chambers is 96" (2.4 m) including pavement design; Maximum cover for the DC-780 chamber is 12' (3.6 m) including pavement design. For installations that do not include pavement, where rutting from vehicles may occur, minimum required cover is 24" (610 mm), maximum cover is as stated above.
4. The contractor must report any discrepancies with the bearing capacity of the chamber foundation materials to the design engineer.
5. AASHTO M288 Class 2 non-woven geotextile (filter fabric) must be used as indicated in the project plans.
6. Stone placement between chamber rows and around perimeter must follow instructions as indicated in the most current version of StormTech's Installation Instructions.
7. Backfilling over the chambers must follow requirements as indicated in the most current version of StormTech's Installation Instructions.
8. The contractor must refer to StormTech's Installation Instructions for a Table of Acceptable Vehicle Loads at various depths of cover. This information is also available at StormTech's website: **www.stormtech.com.** The contractor is responsible for preventing vehicles that exceed StormTech's requirements from traveling across or parking over the stormwater system. Temporary fencing, warning tape and appropriately located signs are commonly used to prevent unauthorized vehicles from entering sensitive construction areas.
9. The contractor must apply erosion and sediment control measures to protect the stormwater system during all phases of site construction per local codes and design engineer's specifications.
10. STORMTECH PRODUCT WARRANTY IS LIMITED. Contact StormTech for warranty information.

14.0 StormTech Product Specifications

1.0 GENERAL

1.1 StormTech chambers are designed to control stormwater runoff. As a subsurface retention system, StormTech chambers retain and allow effective infiltration of water into the soil. As a subsurface detention system, StormTech chambers detain and allow for the metered flow of water to an outfall.

2.0 CHAMBER PARAMETERS

2.1 The Chamber shall be injection molded of an impact modified polypropylene or polyethylene copolymer to maintain adequate stiffness through higher temperatures experienced during installation and service.

2.2 The nominal chamber dimensions of the StormTech SC-740 and DC-780 shall be 30.0" (762 mm) tall, 51.0" (1295 mm) wide and 90.7" (2304 mm) long. The nominal chamber dimensions of the StormTech SC-310 shall be 16.0" (406 mm) tall, 34.0" (864 mm) wide and 90.7" (2304 mm) long. The installed length of a joined chamber shall be 85.4" (2169 mm).

2.3 The chamber shall have a continuously curved section profile.

2.4 The chamber shall be open-bottomed.

2.5 The chamber shall incorporate an overlapping corrugation joint system to allow chamber rows of almost any length to be created. The overlapping corrugation joint system shall be effective while allowing a chamber to be trimmed to shorten its overall length.

2.6 The nominal storage volume of all StormTech chambers includes the volume of the clean, crushed, angular stone with an assumed 40% porosity. The nominal storage volume of a joined StormTech SC-740 chamber shall be 74.9 ft^3 (2.1 m^3) per chamber when installed per StormTech's typical details. This equates to a storage volume per unit area of bed of 2.2 ft^3/ft^2 (0.67 m^3/m^2). The nominal storage volume of a joined StormTech DC-780 chamber shall be 78.4 ft^3 (2.2 m^3) per chamber when installed per StormTech's typical details. This equates to a storage volume per unit area of bed of 2.3 ft^3/ft^2 (0.70 m^3/m^2). The nominal storage volume of a joined StormTech SC-310 chamber shall be 31.0 ft^3 (0.88 m^3) per chamber when installed per StormTech's typical details. This equates to a storage volume per unit area of bed of 1.3 ft^3/ft^2 (0.40 m^3/m^2).

2.7 The SC-740 and SC-310 chambers shall have forty-eight orifices penetrating the sidewalls to allow for lateral conveyance of water.

2.8 The chamber shall have two orifices near its top to allow for equalization of air pressure between its interior and exterior.

2.9 The chamber shall have both of its ends open to allow for unimpeded hydraulic flows and visual inspections down a row's entire length.

2.10 The chamber shall have 14 corrugations.

2.11 The chamber shall have a circular, indented, flat surface on the top of the chamber for an optional 4" (100 mm) diameter (maximum) inspection port.

2.12 The chamber shall be analyzed and designed using AASHTO methods for thermoplastic culverts contained in the LRFD Bridge Design Specifications, 2nd Edition, including Interim Specifications through 2001. Design live load shall be the AASHTO design truck. Design shall consider earth and live loads as appropriate for the minimum to maximum specified depth of fill.

2.13 The chamber shall be manufactured in an ISO 9001:2000 certified facility.

3.0 END CAP PARAMETERS

3.1 The end cap shall be designed to fit into any corrugation of a chamber, which allows: capping a chamber that has its length trimmed; segmenting rows into storage basins of various lengths.

3.2 The end cap shall have saw guides to allow easy cutting for various diameters of pipe that may be used to inlet the system.

3.3 The end cap shall have excess structural adequacies to allow cutting an orifice of any size at any invert elevation.

3.4 The primary face of an end cap shall be curved outward to resist horizontal loads generated near the edges of beds.

3.5 The end cap shall be manufactured in an ISO 9001:2000 certified facility.

15.0 Chamber Specifications for Contract Documents

STORMWATER CHAMBER SPECIFICATIONS:

1. Chambers shall be StormTech SC-740, SC-310 or approved equal.
2. Chambers shall conform to the requirements of ASTM F 2922, "Standard Specification for Polyethylene (PE) Corrugated Wall Stormwater Collection Chambers."
3. Chamber rows shall provide continuous, unobstructed internal space with no internal support panels.
4. The structural design of the chambers, the structural backfill and the installation requirements shall ensure that the load factors specified in the AASHTO LRFD Bridge Design Specifications, Section 12.12 are met for: 1) long-duration dead loads and 2) short-duration live loads, based on the AASHTO Design Truck with consideration for impact and multiple vehicle presences.
5. Chambers shall conform to the requirements of ASTM F2787, "Standard Practice for Structural Design of Thermoplastic Corrugated Wall Stormwater Collection Chambers."
6. Only chambers that are approved by the engineer will be allowed. The contractor shall submit (3 sets) of the following to the engineer for approval before delivering chambers to the project site:
   - A structural evaluation by a registered structural engineer that demonstrates that the load factors specified in the AASHTO LRFD Bridge Design Specifications, Section 12.12 are met. The 50-year creep modulus data specified in ASTM F2922 must be used as part of the AASHTO structural evaluation to verify long-term performance.
7. Chambers shall be produced at an ISO 9001 certified manufacturing facility.
8. All design specifications for chambers shall be in accordance with the manufacturer's latest design manual.
9. The installation of chambers shall be in accordance with the manufacturer's latest installation instructions.

STORMWATER CHAMBER SPECIFICATIONS:

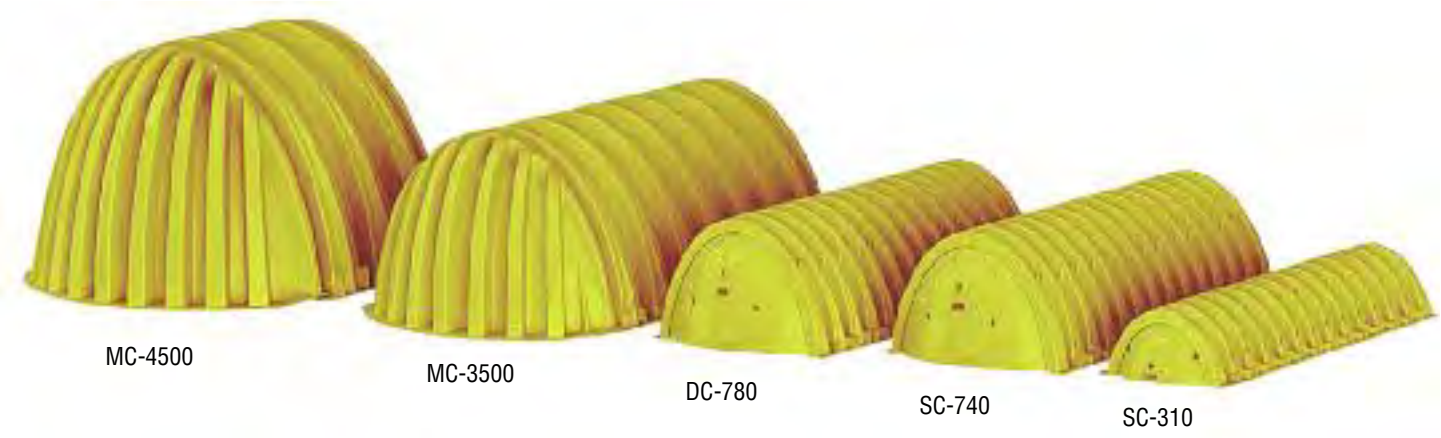
1. Chambers shall be StormTech DC-780 or approved equal.
2. Chambers shall conform to the requirements of ASTM F 2418, "Standard Specification for Polypropylene (PP) Corrugated Wall Stormwater Collection Chambers."
3. Chamber rows shall provide continuous, unobstructed internal space with no internal support panels.
4. The structural design of the chambers, the structural backfill and the installation requirements shall ensure that the load factors specified in the AASHTO LRFD Bridge Design Specifications, Section 12.12 are met for: 1) long-duration dead loads and 2) short-duration live loads, based on the AASHTO Design Truck with consideration for impact and multiple vehicle presences.
5. Chambers shall conform to the requirements of ASTM F2787, "Standard Practice for Structural Design of Thermoplastic Corrugated Wall Stormwater Collection Chambers."
6. Only chambers that are approved by the engineer will be allowed. The contractor shall submit (3 sets) of the following to the engineer for approval before delivering chambers to the project site:
   - A structural evaluation by a registered structural engineer that demonstrates that the load factors specified in the AASHTO LRFD Bridge Design Specifications, Section 12.12 are met. The 50-year creep modulus data specified in ASTM F2418 must be used as part of the AASHTO structural evaluation to verify long-term performance.
7. Chambers shall be produced at an ISO 9001 certified manufacturing facility.
8. All design specifications for chambers shall be in accordance with the manufacturer's latest design manual.
9. The installation of chambers shall be in accordance with the manufacturer's latest installation instructions.

A Family of Products and Services for the Stormwater Industry:

- MC-3500 and MC-4500 Chambers and End Caps
- SC-310 and SC-740 Chambers and End Caps
- DC-780 Chambers and End Caps
- Fabricated End Caps
- Fabricated Manifold Fittings
- Patented Isolator Row for Maintenance and Water Quality
- Chamber Separation Spacers
- In-House System Layout Assistance
- On-Site Educational Seminars
- Worldwide Technical Sales Group
- Centralized Product Applications Department
- Research and Development Team
- Technical Literature, O&M Manuals and Detailed CAD drawings all downloadable via our Web Site

StormTech provides state of the art products and services that meet or exceed industry performance standards and expectations. We offer designers, regulators, owners and contractors the highest quality products and services for stormwater management that "Saves Valuable Land and Protects Water Resources."

Please contact one of our inside project application professionals or Engineered Product Managers (EPMs) to discuss your particular application. A wide variety of technical support material is available in print, electronic media or from our website at www.stormtech.com. For any questions, please call StormTech at 888-892-2694.



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APPENDIX E

SOILS PERCOLATION TESTING & WEB SOIL SURVEY INFORMATION

S:\PERC TEST MATERIALS\PERC TEST STORM.xlsx

DESIGN DATA SHEET - STORMWATER INFILTRATION SYSTEM JOB NO. 20044

Owner ANA PEREIRA Address 4 TRIPP LANE

Located at (Street) WEST OF NYS ROUTE 22 Sec. 108.02 Block 1 Lot 10
(Indicate nearest cross st.)

Municipality TOWN OF NORTH CASTLE Watershed LONG ISLAND SOUND BASIN

SOIL INFILTRATION TEST DATA

Presoak Date: 7/27/22 Run Date: 7/27/22

Hole #		CLOCK TIME				INFILTRATION		
Hole Number	Run No.	Start	Stop	Elapse Time Min.	Depth From Grd (INCHES)	To surface water (INCHES)	Water Level Drop In Inches	Soil Rate In/Hr Drop
1	1	826	856	30	42	18	10	20
	2	856	926	30	42	18	9	18
	3	926	956	30	42	18	8	16
	4							
2	1	812	842	30	42	18	20	40
	2	842	912	30	42	18	20	40
	3	912	942	30	42	18	20	40
	4							
3	1							
	2							
	3							
	4							
4	1							
	2							
	3							
	4							

Notes: Perc test done by: JMC, PLLC

1) Tests to be repeated at same depth until approximately equal soil rates are obtained at each infiltration test hole. All data to be submitted for review.
2) Depth measurements to be made from top of hole. DO NOT REPORT INCREMENTS OF LESS THAN ONE INCH.

S:\PERC TEST MATERIALS\PERC TEST STORM.xlsx

DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH	HOLE NO. 1 (±584 Ex Elev.)	HOLE NO. 2 (± 584 Ex Elev.)	HOLE NO. 3	HOLE NO. 4
G.L.	TOP SOIL	TOP SOIL		
6"				
12"				
18"	FILL	FILL		
24"				
30"				
36"				
42"				
48"	SILTY LOAM WITH FEW COBBLES	SILTY LOAM WITH FEW COBBLES		
54"				
60"				
66"				
72"				
78"				
84"	NO GW NO ROCK	NO GW NO ROCK		

WAS GROUNDWATER ENCOUNTERED? NO

INDICATE LEVEL AT WHICH GROUND WATER IS ENCOUNTERED N/A

INDICATE LEVEL AT WHICH WATER RISES AFTER BEING ENCOUNTERED N/A

DEEP TESTS MADE BY JMC, PLLC DATE OF DEEP TESTS 7/27/22

DESIGN

Soil Rate Used: 16 IN/HR ~~Min/4" Drop:~~

Name RICK BOHLANDER Signature

Address JMC, PLLC
120 Bedford Road
Armonk, NY 10504

SEAL

STATE OF NEW YORK
FREDERICK BOHLANDER
100532-1
LICENSED PROFESSIONAL ENGINEER

F:\PERC TEST TEMPLATES\PERC TEST STORM.xlsx

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New York
Location	
Longitude	73.687 degrees West
Latitude	41.135 degrees North
Elevation	0 feet
Date/Time	Mon, 12 Jul 2021 07:14:58 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.34	0.52	0.64	0.84	1.05	1.31	**1yr**	0.91	1.23	1.50	1.85	2.28	2.81	3.18	**1yr**	2.49	3.06	3.55	4.26	4.91	**1yr**
2yr	0.40	0.62	0.77	1.02	1.28	1.60	**2yr**	1.10	1.49	1.84	2.27	2.79	3.43	3.86	**2yr**	3.03	3.71	4.26	5.05	5.72	**2yr**
5yr	0.47	0.73	0.92	1.23	1.58	1.99	**5yr**	1.36	1.83	2.30	2.85	3.51	4.31	4.88	**5yr**	3.81	4.69	5.44	6.33	7.10	**5yr**
10yr	0.53	0.83	1.05	1.42	1.85	2.36	**10yr**	1.60	2.15	2.73	3.40	4.18	5.12	5.84	**10yr**	4.53	5.61	6.55	7.52	8.36	**10yr**
25yr	0.61	0.97	1.24	1.72	2.29	2.95	**25yr**	1.97	2.66	3.43	4.28	5.28	6.44	7.40	**25yr**	5.70	7.12	8.38	9.43	10.38	**25yr**
50yr	0.69	1.11	1.43	2.00	2.69	3.50	**50yr**	2.32	3.12	4.08	5.10	6.28	7.67	8.86	**50yr**	6.78	8.52	10.09	11.21	12.24	**50yr**
100yr	0.79	1.27	1.64	2.33	3.17	4.15	**100yr**	2.74	3.67	4.86	6.08	7.50	9.13	10.61	**100yr**	8.08	10.21	12.17	13.32	14.43	**100yr**
200yr	0.89	1.46	1.89	2.71	3.74	4.93	**200yr**	3.23	4.32	5.78	7.26	8.94	10.89	12.72	**200yr**	9.64	12.23	14.68	15.83	17.02	**200yr**
500yr	1.07	1.76	2.29	3.33	4.66	6.19	**500yr**	4.02	5.35	7.28	9.16	11.30	13.75	16.17	**500yr**	12.17	15.55	18.81	19.89	21.18	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.48	0.65	0.80	0.96	**1yr**	0.69	0.94	1.29	1.60	2.00	2.58	2.74	**1yr**	2.28	2.64	3.20	3.72	4.24	**1yr**
2yr	0.39	0.61	0.75	1.01	1.24	1.49	**2yr**	1.07	1.45	1.70	2.17	2.74	3.32	3.74	**2yr**	2.94	3.60	4.13	4.89	5.56	**2yr**
5yr	0.43	0.66	0.82	1.13	1.44	1.74	**5yr**	1.24	1.70	1.97	2.57	3.21	3.96	4.51	**5yr**	3.51	4.34	5.01	5.82	6.58	**5yr**
10yr	0.47	0.72	0.89	1.24	1.60	1.96	**10yr**	1.38	1.92	2.22	2.93	3.64	4.53	5.20	**10yr**	4.01	5.00	5.79	6.57	7.47	**10yr**
25yr	0.50	0.77	0.95	1.36	1.79	2.28	**25yr**	1.55	2.23	2.57	3.46	4.29	5.39	6.28	**25yr**	4.77	6.04	7.01	7.69	8.81	**25yr**
50yr	0.53	0.80	1.00	1.44	1.93	2.55	**50yr**	1.67	2.49	2.89	3.94	4.87	6.15	7.25	**50yr**	5.44	6.97	8.09	8.59	9.98	**50yr**
100yr	0.56	0.84	1.06	1.53	2.09	2.83	**100yr**	1.81	2.77	3.25	4.50	5.48	7.02	8.38	**100yr**	6.21	8.06	9.34	9.63	11.31	**100yr**
200yr	0.59	0.89	1.13	1.63	2.27	3.16	**200yr**	1.96	3.09	3.66	5.14	6.23	7.99	9.68	**200yr**	7.07	9.31	10.80	10.70	12.82	**200yr**
500yr	0.63	0.94	1.20	1.75	2.49	3.66	**500yr**	2.15	3.58	4.29	6.19	7.39	9.51	11.71	**500yr**	8.41	11.26	13.06	12.27	15.11	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.37	0.57	0.70	0.94	1.16	1.40	**1yr**	1.00	1.37	1.59	2.08	2.61	3.04	3.45	**1yr**	2.69	3.32	3.83	4.61	5.31	**1yr**
2yr	0.43	0.66	0.82	1.10	1.36	1.58	**2yr**	1.18	1.55	1.81	2.31	2.89	3.55	3.99	**2yr**	3.14	3.84	4.42	5.30	5.93	**2yr**
5yr	0.51	0.79	0.98	1.35	1.72	2.02	**5yr**	1.48	1.97	2.32	2.97	3.71	4.66	5.27	**5yr**	4.12	5.07	5.88	6.84	7.64	**5yr**
10yr	0.61	0.94	1.16	1.62	2.09	2.43	**10yr**	1.81	2.37	2.82	3.59	4.51	5.74	6.51	**10yr**	5.08	6.26	7.30	8.40	9.29	**10yr**
25yr	0.77	1.18	1.46	2.09	2.75	3.13	**25yr**	2.37	3.06	3.65	4.63	5.80	7.56	8.62	**25yr**	6.69	8.29	9.75	11.05	12.02	**25yr**
50yr	0.92	1.40	1.74	2.51	3.37	3.80	**50yr**	2.91	3.72	4.45	5.61	7.04	9.33	10.66	**50yr**	8.26	10.25	12.14	13.60	14.61	**50yr**
100yr	1.11	1.68	2.10	3.03	4.16	4.63	**100yr**	3.59	4.52	5.42	6.81	8.69	11.53	13.20	**100yr**	10.21	12.69	15.14	16.77	17.78	**100yr**
200yr	1.33	2.01	2.55	3.68	5.14	5.62	**200yr**	4.43	5.50	6.61	8.24	10.57	14.26	16.34	**200yr**	12.62	15.71	18.88	20.67	21.65	**200yr**
500yr	1.73	2.57	3.31	4.81	6.84	7.27	**500yr**	5.90	7.11	8.59	10.63	13.72	18.89	21.69	**500yr**	16.72	20.85	25.30	27.36	28.07	**500yr**

Powered by ACIS Northeast Regional Climate Center

Map Scale: 1:5,700 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 16, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ce	Catden muck, 0 to 2 percent slopes	B/D	31.4	19.5%
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	18.4	11.5%
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	B	0.5	0.3%
CtC	Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes	B	6.1	3.8%
LcB	Leicester loam, 3 to 8 percent slopes, stony	A/D	4.1	2.6%
NcA	Natchaug muck, 0 to 2 percent slopes	B/D	5.4	3.3%
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	C	47.6	29.6%
PnC	Paxton fine sandy loam, 8 to 15 percent slopes	C	6.6	4.1%
RdB	Ridgebury complex, 3 to 8 percent slopes	D	5.3	3.3%
Ub	Udorthents, smoothed	B	28.8	17.9%
W	Water		0.2	0.1%
WdB	Woodbridge loam, 3 to 8 percent slopes	C/D	6.4	4.0%
Totals for Area of Interest			**160.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPLICANT/OWNER:
MR. & MRS. PEREIRA
4 TRIPP LANE
TOWN OF NORTH CASTLE, NY

ARCHITECT:
GET MY CO
57 WHEELER AVENUE, SUITE 203
PLEASANTVILLE, NY

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

PHOTOS OF THE PATIO AREA

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · FREDERICK BOHLANDER · 100532-1 · LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	PLANNING BOARD SUBMISSION	01/09/2023	RB

Previous Editions Obsolete

Drawn: DK	Approved: AN
Scale:	N.T.S.
Date:	01/09/2023
Project No:	20044
20044-SITE DK	PATIO
Drawing No:	P-1

Site Design Consultants

Civil Engineers • Land Planners

April 18, 2022

Robert Melillo, Building Inspector
Town of North Castle
17 Bedford Road
Armonk, NY 10504

Re: Pereira – 4 Trip Lane, Armonk

Dear Mr. Melillo:

We have been retained by the Pereira Family regarding retaining walls which have been constructed on their property without filing for the required permits to your department, specifically, the stone and mortar walls along the east and west property lines. The walls along the east property line are only partially being considered as part of the existing walls to remain. An additional length of dry stacked stone wall along the east property line is to be removed and reconstructed as per the enclosed plan.

As stated, the existing walls to remain were constructed by the homeowner without filing the proper construction plans and permits. Hence, the construction of the walls were not supervised or inspected by a town official or licensed design professional. We, therefore, cannot attest to the construction. However, we did inspect the walls in their current state. We specifically were looking for any signs of movement such as collapse, settlement, bowing out, or leaning of the wall. We found none of these conditions. The wall appears to be sound and stable. We, therefore, believe the walls at this point in time appear to be structurally sound.

The dry stacked portion of the east wall is to be disassembled and rebuilt. This portion is about 190 lf. We have prepared a design and plan with the necessary detail to reconstruct this wall as a continuation of the stone and mortar wall. The wall has a maximum height of 5 feet. The plan and supporting calculations are enclosed for your review as follows:

- Two copies of the Plan titled "Retaining Wall Plan prepared for Ana Pereira" dated 4/7/22, Sheet 1 of 1; and
- Two copies of the Structural Wall Calculations.

If you have any question or comments, please contact us. Thank you.

Sincerely,

Joseph C. Riina, P.E.
NYS Lic. No. 64431

cc: A. Pereira
J. Cermele, P.E., Consulting TE
A. Nestor, P.E.

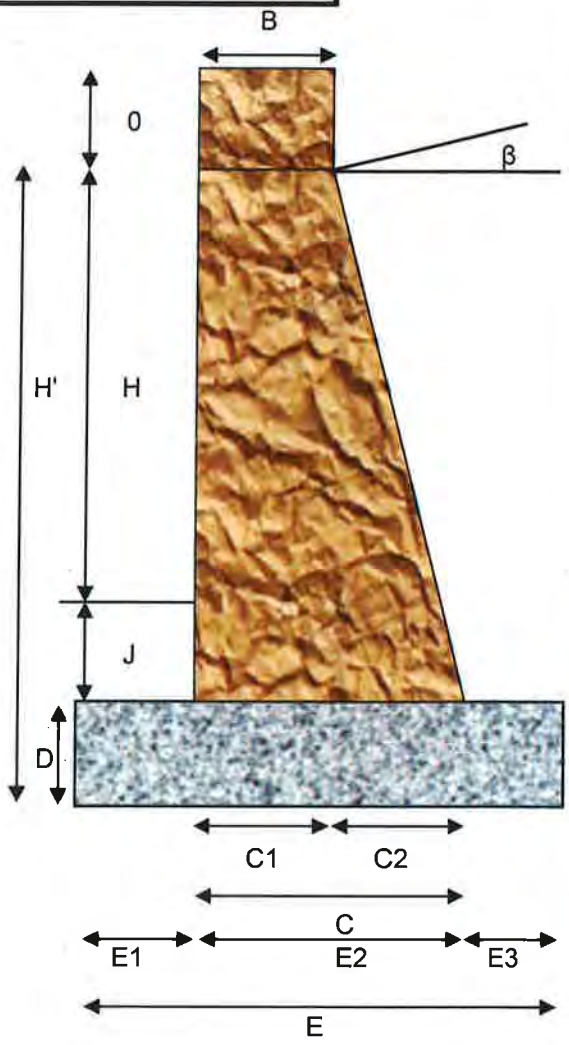
251-F Underhill Avenue • Yorktown Heights, New York 10598
60 Walnut Grove Road • Ridgefield, Connecticut 06877
(914) 962-4488 (203) 431-9504 Fax (914) 962-7386

Proposed Retaining Wall Design Prepared for Pereira Residence
4 Tripp Lane Armonk, NY

Prepared By **Site Design Consultants**
251 F Underhill Avenue Yorktown Heights, NY 10598
April 18, 2022

Design Parameters		
Top width, B	2.00	ft
Bottom width, C1	2.00	ft
Bottom width, C2	1.00	ft
Total Bottom width, C	3.00	ft
Footing depth, D	1.00	ft
Footing width, E1	0.75	ft
Footing width, E2	3.00	ft
Footing width, E3	0.50	ft
Total Footing width, E	4.25	ft
Exposed wall height, H	5.00	ft
Burried height, J	2.00	ft
Wall height (design), H'	8.00	ft
Gamma (H'/3)	2.67	ft
Unit weight of wall	170	pcf
Footing Material	Gravel	
Unit weight of footing	125	pcf
Back Angle, β	27	degrees
Unit weight of soil	110	pcf
Friction angle of soil, ϕ	32	degrees
Surcharge load	0	psf

Exposed Wall Height 5'



Pressure Calculations

Ka =	0.472681
Pa =	1663.836
Pah =	1482.489
Pav =	755.366
Pa surcharge =	0.000
Pah surcharge =	0.000
Pav surcharge =	0.000

Resisting Moment

		Weight	Arm	Moment
Wall	Part 1	2380.00	1.75	4165.00
	Part 2	595.00	3.08	1834.58
Footing		531.25	2.13	1128.91
Pav		755.37	4.25	3210.30
Sum		**4261.62**		**10338.79**

Proposed Retaining Wall Design Prepared for Pereira Residence
4 Tripp Lane Armonk, NY

Prepared By **Site Design Consultants**
251 F Underhill Avenue Yorktown Heights, NY 10598
April 18, 2022

Overturning Moment

		Arm	Moment
Pah	1482.49	2.67	3953.30
Pah surcharge	0.00	4.00	0.00
Total overturning Moment		**3953.30**	

FS overturning

$M_{resisting}/M_{overturning}$ = **2.615229** > 1.50 **OK**

Resisting Forces

f = tan (ϕ) = 0.62

$F_{resisting}$ = Sum Weight * f = 2662.953

FS Sliding

$F_{resisting}$ / Pah = **1.796272** > 1.50 **OK**

Eccentricity

$\bar{x} = \Sigma M_{toe}/\Sigma W$

$\bar{x}$ = **1.50** CW moment is +

Bowles pg 455

e = B/2- $\bar{x}$

e = **0.63** <=L/6 OK

N.A.

Allowable Bearing Forces

q_{allow} = **6000** psf

q_{actual} = P/A*(1+ 6e/L)

q actual = **115.6656** MIN

q actual = **1889.801** MAX

FS Bearing

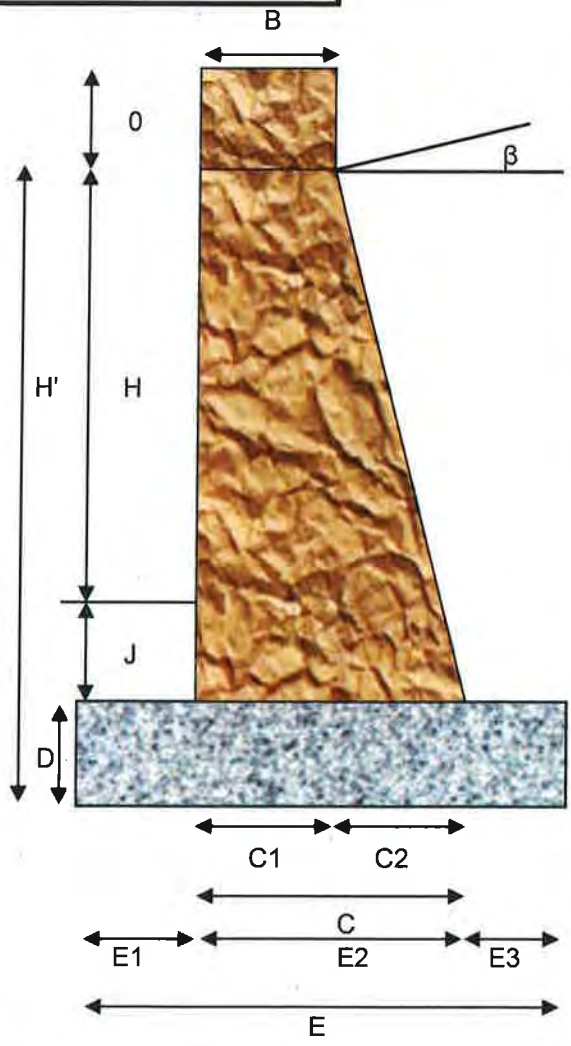
q allow / q actual = **3.174938** > 2.0 **OK**

Proposed Retaining Wall Design Prepared for Pereira Residence
4 Tripp Lane Armonk, NY

Prepared By **Site Design Consultants**
251 F Underhill Avenue Yorktown Heights, NY 10598
April 18, 2022

Design Parameters		
Top width, B	2.00	ft
Bottom width, C1	2.00	ft
Bottom width, C2	1.00	ft
Total Bottom width, C	3.00	ft
Footing depth, D	1.00	ft
Footing width, E1	0.75	ft
Footing width, E2	3.00	ft
Footing width, E3	0.50	ft
Total Footing width, E	4.25	ft
Exposed wall height, H	5.00	ft
Burried height, J	2.00	ft
Wall height (design), H'	8.00	ft
Gamma (H'/3)	2.67	ft
Unit weight of wall	170	pcf
Footing Material	Gravel	
Unit weight of footing	125	pcf
Back Angle, β	27	degrees
Unit weight of soil	110	pcf
Friction angle of soil, ϕ	32	degrees
Surcharge load	0	psf

Exposed Wall Height 5'



Pressure Calculations

Ka =	0.472681
Pa =	1663.836
Pah =	1482.489
Pav =	755.366
Pa surcharge =	0.000
Pah surcharge =	0.000
Pav surcharge =	0.000

Resisting Moment

		Weight	Arm	Moment
Wall	Part 1	2380.00	1.75	4165.00
	Part 2	595.00	3.08	1834.58
Footing		531.25	2.13	1128.91
Pav		755.37	4.25	3210.30
Sum		**4261.62**		**10338.79**

Proposed Retaining Wall Design Prepared for Pereira Residence
4 Tripp Lane Armonk, NY

Prepared By **Site Design Consultants**
251 F Underhill Avenue Yorktown Heights, NY 10598
April 18, 2022

Overturning Moment

		Arm	Moment
Pah	1482.49	2.67	3953.30
Pah surcharge	0.00	4.00	0.00
Total overturning Moment		**3953.30**	

FS overturning

$M_{resisting}/M_{overturning}$ = **2.615229** > 1.50 **OK**

Resisting Forces

f = tan (ϕ) = 0.62

$F_{resisting}$ = Sum Weight * f = 2662.953

FS Sliding

$F_{resisting}$ / Pah = **1.796272** > 1.50 **OK**

Eccentricity

$\bar{x} = \Sigma M_{toe}/\Sigma W$

$\bar{x}$ = **1.50** CW moment is +

Bowles pg 455

e = B/2- $\bar{x}$

e = **0.63** <=L/6 OK

N.A.

Allowable Bearing Forces

q_{allow} = **6000** psf

q_{actual} = P/A*(1+ 6e/L)

q actual = **115.6656** MIN

q actual = **1889.801** MAX

FS Bearing

q allow / q actual = **3.174938** > 2.0 **OK**

TOWN OF NORTH CASTLE

WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

FLOOR AREA CALCULATIONS WORKSHEET

Application Name or Identifying Title: Pereira residence Date: 9-16-20

Tax Map Designation or Proposed Lot No.: 108.02-1-10

Floor Area

1. Total Lot Area (Net Lot Area for Lots Created After 12/13/06): 89820

2. **Maximum** permitted floor area (per Section 213-22.2B): 10230

3. Amount of floor area contained within first floor**:**
1803 existing + 0 proposed = 1803

4. Amount of floor area contained within second floor**:**
0 existing + 0 proposed =

5. Amount of floor area contained within garage**:**
0 existing + 0 proposed = NOT A STORY 0

6. Amount of floor area contained within porches capable of being enclosed**:**
22 existing + 0 proposed = 22

7. Amount of floor area contained within basement (if applicable – see definition)**:**
0 existing + 0 proposed = NOT A STORY 0

8. Amount of floor area contained within attic (if applicable – see definition)**:**
0 existing + 0 proposed = 0

9. Amount of floor area contained within all accessory buildings:
0 existing + 0 proposed = 0

10. Proposed **floor area:** Total of Lines 3 – 9 = 1825: OK

If Line 10 is less than or equal to Line 2, your proposal **complies** with the Town's maximum floor area regulations and the project may proceed to the Residential Project Review Committee for review. If Line 10 is greater than Line 2 your proposal does not comply with the Town's regulations.

Signature ing Worksheet 9-16-20 Date

TOWN OF NORTH CASTLE
WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
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FLOOR AREA CALCULATIONS WORKSHEET

Application Name or Identifying Title: Pereira residence Date: 9-16-20

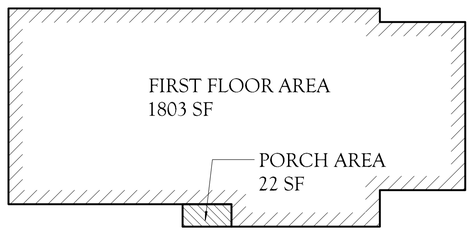
Tax Map Designation or Proposed Lot No.: 108.02-1-10

Floor Area

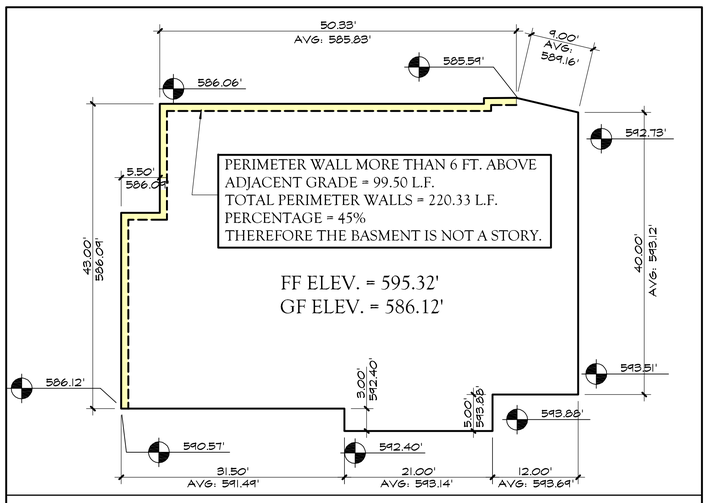
1.	Total Lot Area (Net Lot Area for Lots Created After 12/13/06):	89820
2.	**Maximum** permitted floor area (per Section 213-22.2B):	10230
3.	Amount of floor area contained within first floor: 1803 existing + 0 proposed =	1803
4.	Amount of floor area contained within second floor: 0 existing + 0 proposed =	
5.	Amount of floor area contained within garage: 0 existing + 0 proposed = NOT A STORY	0
6.	Amount of floor area contained within porches capable of being enclosed: 22 existing + 0 proposed =	22
7.	Amount of floor area contained within basement (if applicable – see definition): 0 existing + 0 proposed = NOT A STORY	0
8.	Amount of floor area contained within attic (if applicable – see definition): 0 existing + 0 proposed =	0
9.	Amount of floor area contained within all accessory buildings: 0 existing + 0 proposed =	0
10.	Proposed **floor area:** Total of Lines 3 – 9 =	1825. OK

If Line 10 is less than or equal to Line 2, your proposal **complies** with the Town's maximum floor area regulations and the project may proceed to the Residential Project Review Committee for review. If Line 10 is greater than Line 2 your proposal does not comply with the Town's regulations.

Signature ing Worksheet 9-16-20 Date



GROSS FLOOR AREA DIAGRAM



AVERAGE GRADE CALCULATION

LENGTH	ELEVATION	TOTAL
31.50'	591.49'	18631
3.00'	592.40'	1777
21.00'	593.14'	12455
5.00'	593.88'	2969
12.00'	593.69'	7124
40.00'	593.12'	23724
9.00'	589.16'	5302
50.33'	585.83'	29484
5.50'	586.09'	3223
43.00'	586.09'	25201
220.33'		129890

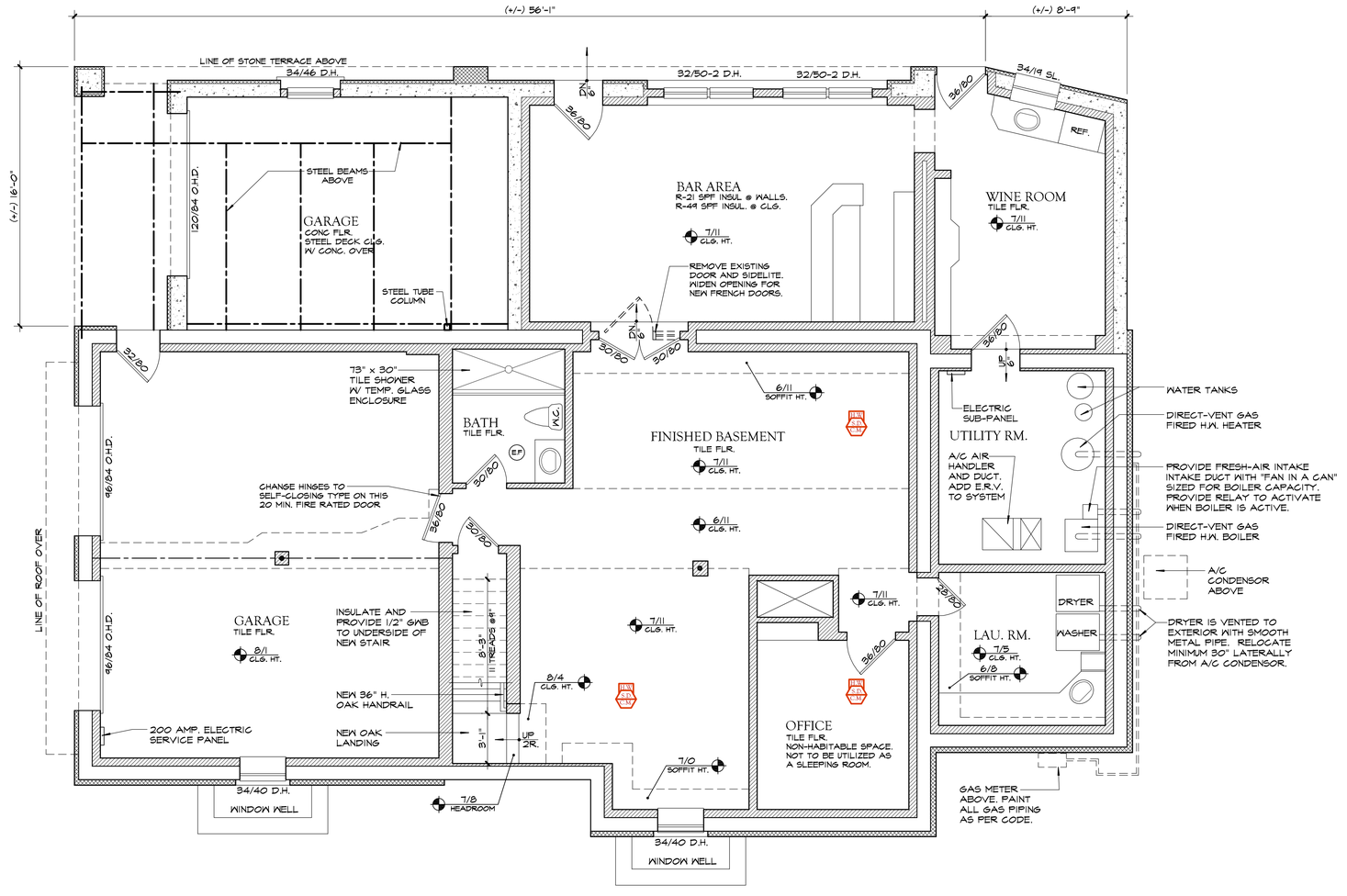
AVERAGE GRADE: $\frac{129890}{220.33'} = 589.52'$

FIRST FLOOR ELEV. = 595.32'
- AVERAGE GRADE = 589.52'
5.80' < 6.00'

THEREFORE THIS BASEMENT IS NOT A STORY

AVERAGE GRADE DIAGRAM

SCALE: 1"=10'-0"



AS- BUILT BASEMENT FLOOR PLAN

SCALE: 1/4"= 1'0"

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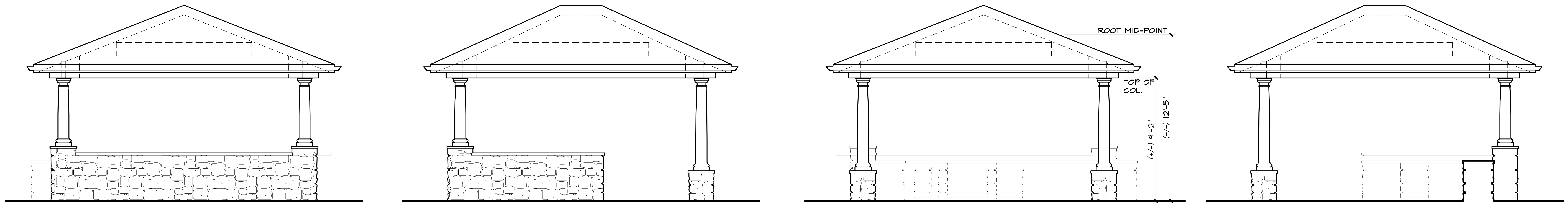
57 Wheeler Avenue, Suite 203, Pleasantville, New York 10570
Phone: 914-727-0980 EMail: copro.getmyco@gmail.com

Legalizations to the
Pereira Residence
4 Tripp Lane, Armonk, New York
Section: 108.2 Block: 1 Lot: 10

REGISTERED ARCHITECT — STATE OF NEW YORK

△	Revisions
Date:	09/16/20
Do Not Scale Prints	
Sheet No.	A1
Pereira	



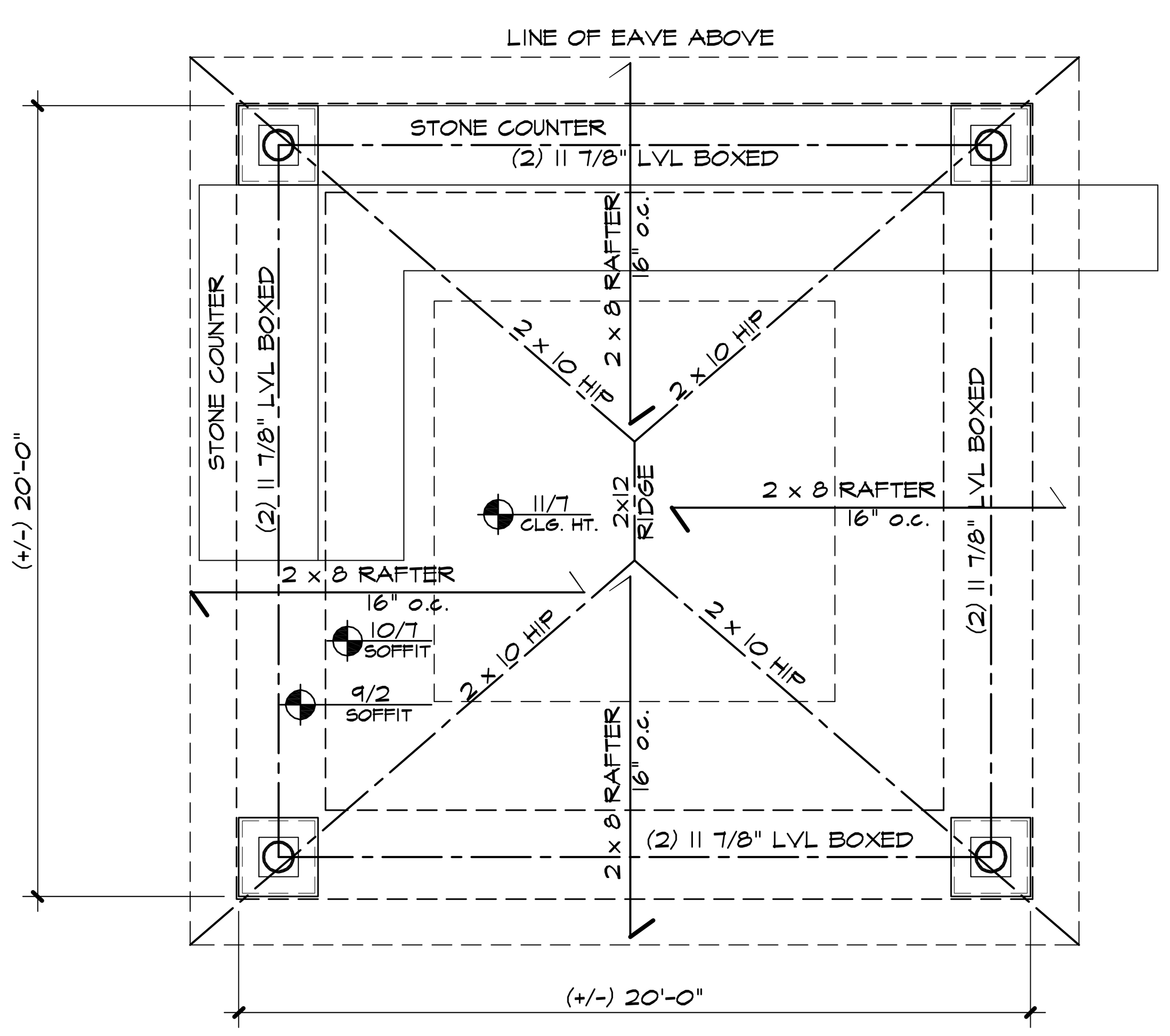
NORTH ELEVATION
SCALE: 1/4"= 1'0" REAR

WEST ELEVATION
SCALE: 1/4"= 1'0" SIDE

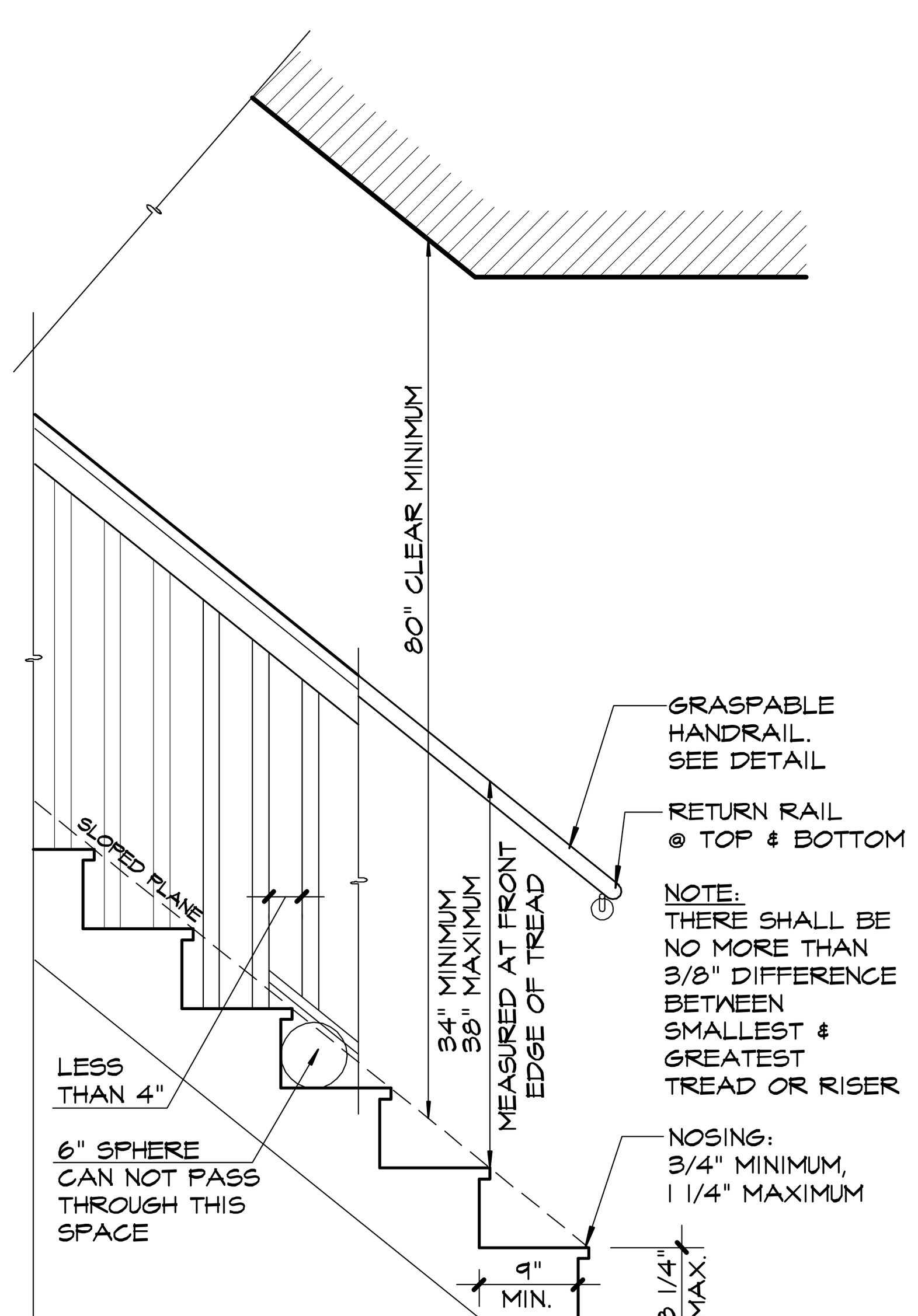
SOUTH ELEVATION
SCALE: 1/4"= 1'0" FRONT

EAST ELEVATION
SCALE: 1/4"= 1'0" SIDE

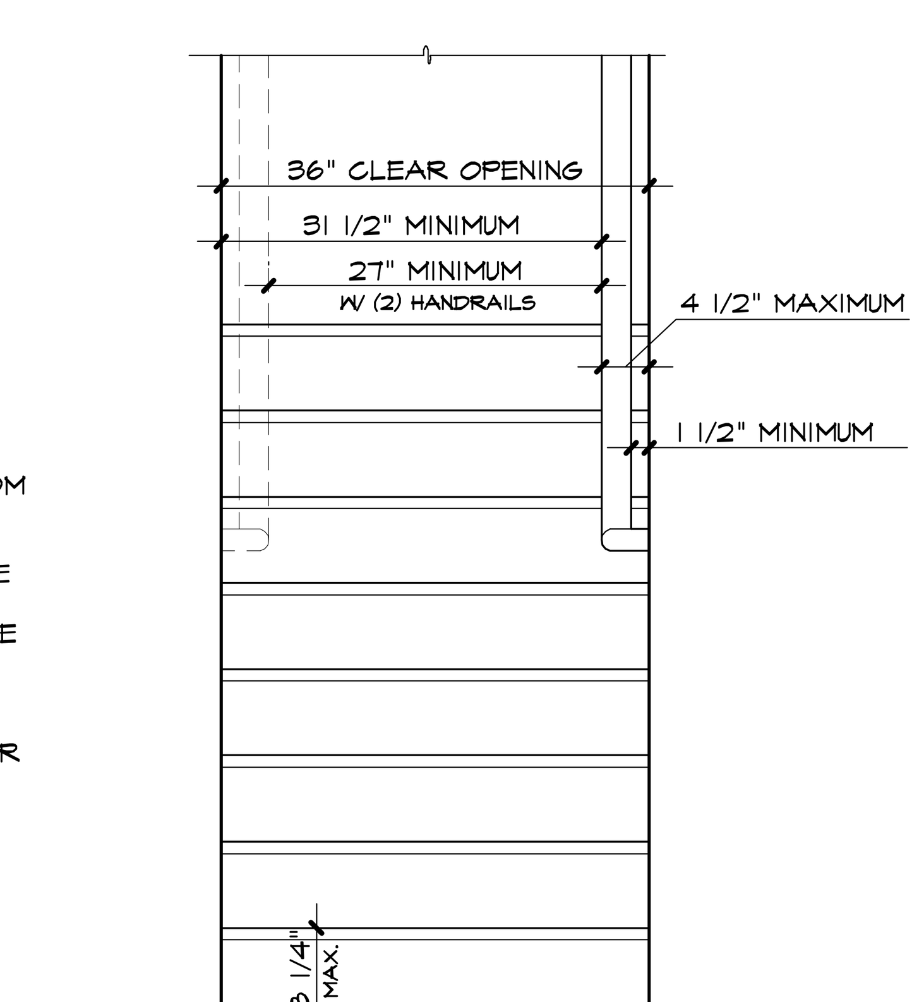
POOL PAVILLION ELEVATIONS



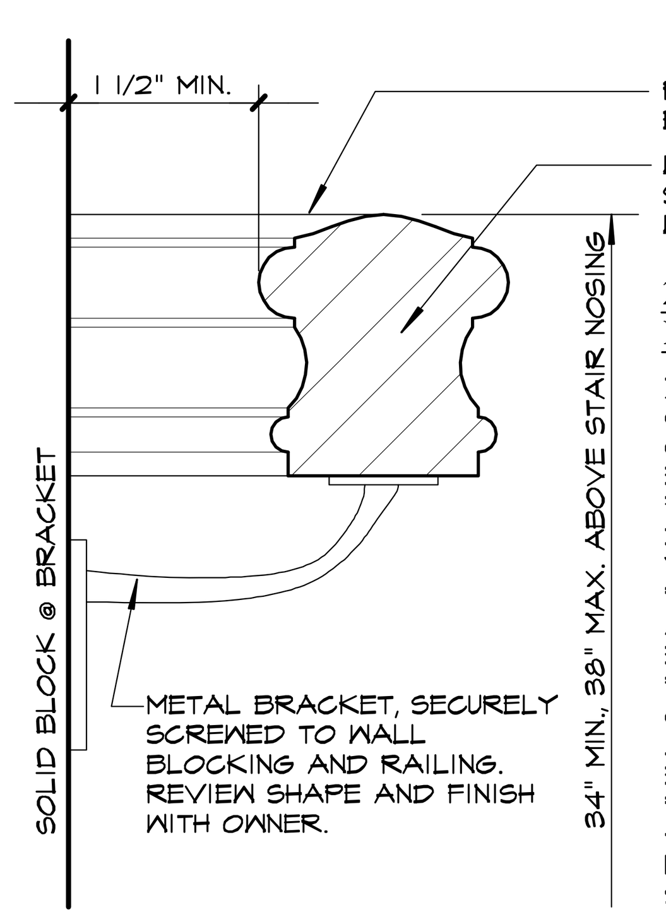
POOL PAVILION FLOOR PLAN
SCALE: 1/4"= 1'0"



A STAIR SECTION
SCALE: 3/4" = 1'0" GENERIC STAIR PER CODE SEE PLANS FOR SPECIFIC DIMENSIONS



B STAIR ELEVATION
SCALE: 3/4" = 1'0" GENERIC STAIR PER CODE SEE PLANS FOR SPECIFIC DIMENSIONS



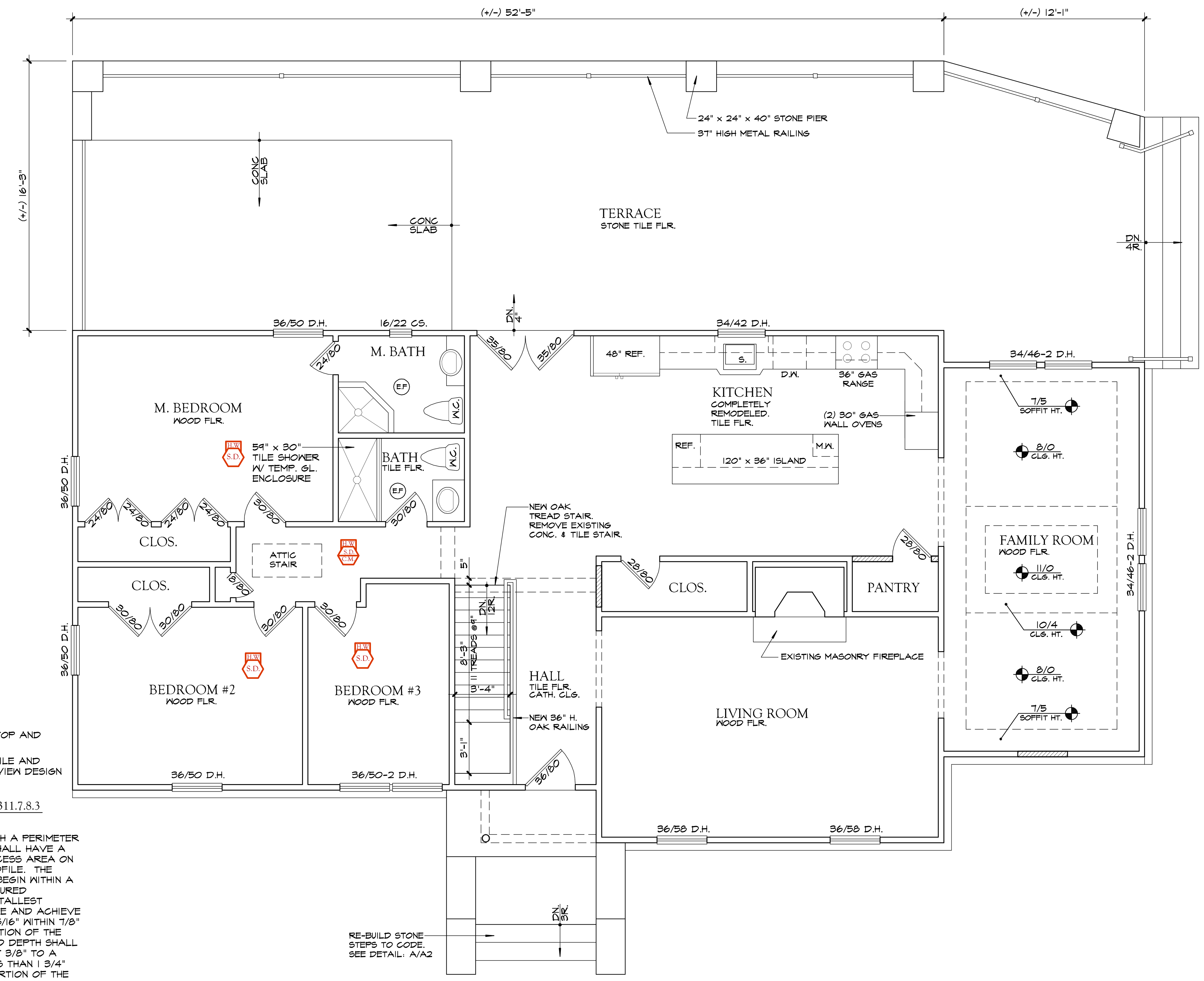
RETURN BOTH ENDS AT TOP AND BOTTOM TO WALL.

WOOD HANDRAIL. PROFILE AND SPECIES MAY VARY, REVIEW DESIGN WITH OWNER.

2015 I.R.C. SECTION R 311.7.8.3
HANDRAIL GRIP SIZE

TYPE II. HANDRAILS WITH A PERIMETER GREATER THAN 6 1/4" SHALL HAVE A GRASPABLE FINGER RECESS AREA ON BOTH SIDES OF THE PROFILE. THE FINGER RECESS SHALL BEGIN WITHIN A DISTANCE OF 3/4" MEASURED VERTICALLY FROM THE TALLEST PORTION OF THE PROFILE AND ACHIEVE A DEPTH OF AT LEAST 5/16" WITHIN 7/8" BELOW THE WIDEST PORTION OF THE PROFILE. THIS REQUIRED DEPTH SHALL CONTINUE FOR AT LEAST 3/8" TO A LEVEL THAT IS NOT LESS THAN 1 3/4" BELOW THE TALLEST PORTION OF THE PROFILE. THE MINIMUM WIDTH OF THE HANDRAIL ABOVE THE RECESS SHALL BE 1 1/4" TO A MAXIMUM OF 2 3/4". EDGES SHALL HAVE A MINIMUM RADIUS OF 0.01"

C HANDRAIL DETAIL
SCALE: 6" = 1'0"



AS-BUILT FIRST FLOOR PLAN
SCALE: 1/4"= 1'0"

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Legalizations to the
Pereira Residence
4 Tripp Lane, Armonk, New York
Section: 108.2 Block: 1 Lot: 10

Revisions

Date: 09/16/20

Do Not Scale Prints

Sheet No.

A2

Pereira


REAR VIEW FROM POOL

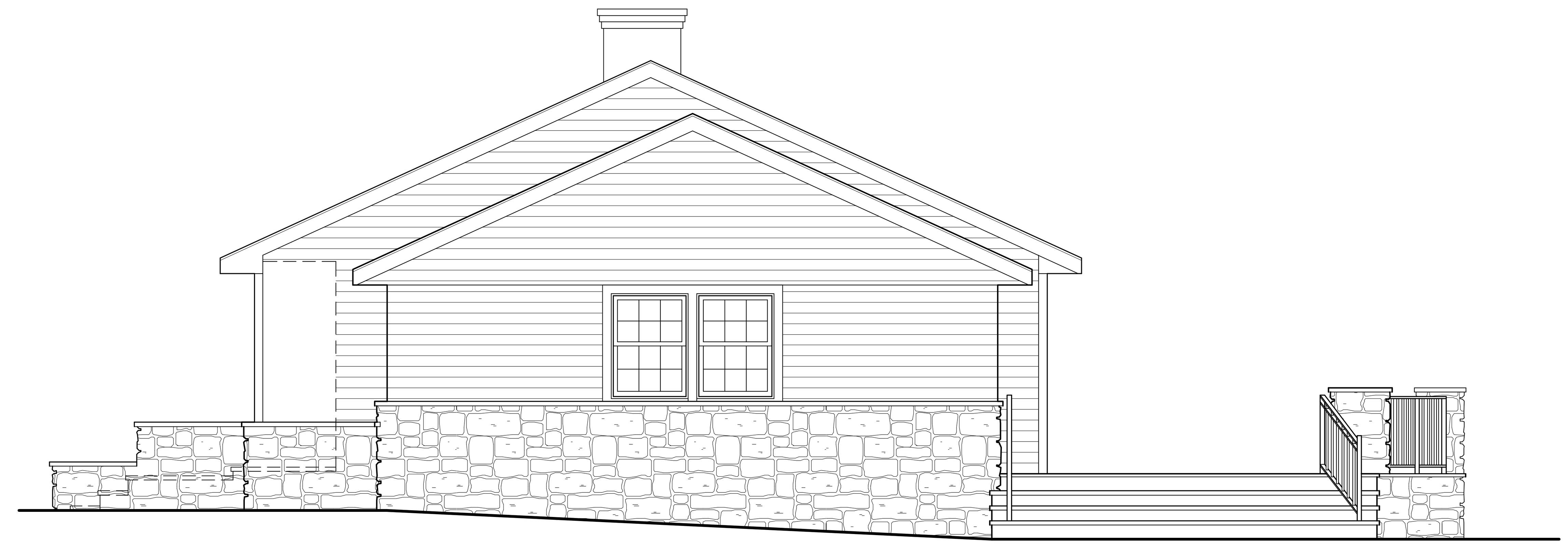

FRONT VIEW


POOL PAVILLION


SHED


SOUTH ELEVATION
SCALE: 1/4"= 1'0" FRONT


WEST ELEVATION
SCALE: 1/4"= 1'0" SIDE


EAST ELEVATION
SCALE: 1/4"= 1'0" SIDE


REAR VIEW FROM YARD


REAR VIEW FROM DRIVEWAY

NORTH ELEVATION
SCALE: 1/4"= 1'0" REAR

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Legalizations to the
Pereira Residence
4 Tripp Lane, Armonk, New York
Section: 108.2 Block: 1 Lot: 10

REGISTERED ARCHITECT
STATE OF NEW YORK

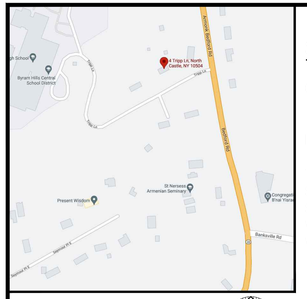
△	Revisions

Date: 09/16/20

Do Not Scale Prints

Sheet No.
A3

Pereira



LOCATION MAP
NOT TO SCALE

N

SITE DATA:

OWNER / DEVELOPER:	ANA PEREIRA 4 TRIPP LANE ARMONK, NY, 10504
PROJECT LOCATION:	4 TRIPP LANE ARMONK, NY, 10504
TOWN TAX MAP DATA:	SECTION 108.02, BLOCK 1, LOT 10
SITE AREA :	2.06 ACRES (89,820.04 SF)
SEWAGE FACILITIES:	SUBSURFACE SEWAGE TREATMENT SYSTEM
WATER FACILITIES:	DRILLED WELL
WATERSHED:	INLAND LONG ISLAND SOUND BASIN

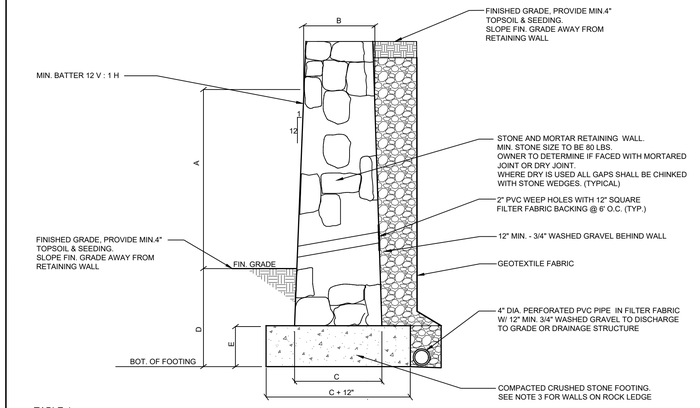


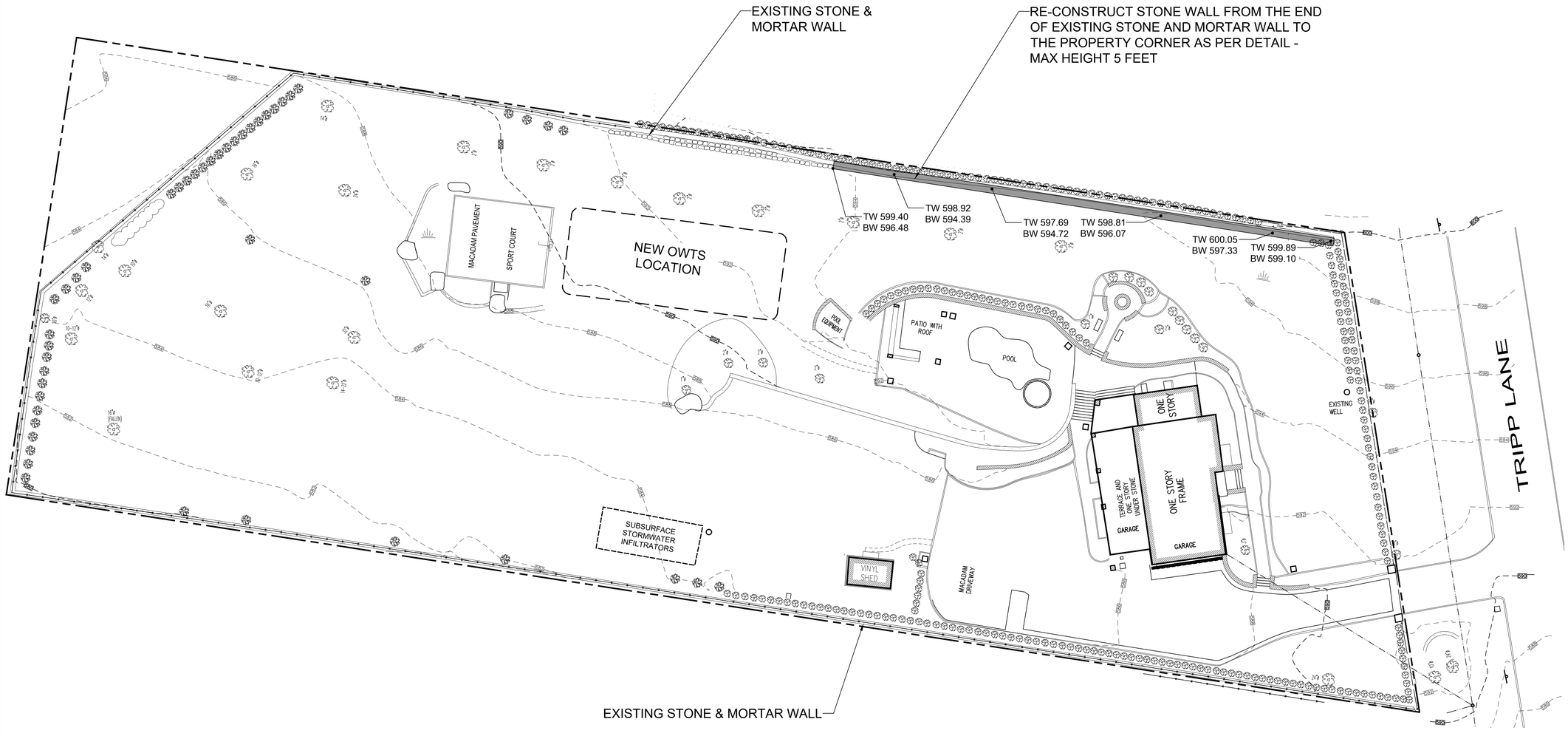
TABLE-1

WALL HEIGHT "A"	TOP OF WALL WIDTH "B"	BOTTOM OF WALL WIDTH "C"	BURIAL DEPTH "D"	FOOTING DEPTH "E"
0 TO 4'-0"	2'-0"	2'-6"	3'-0"	1'-0"
5'-0"	2'-0"	3'-0"	3'-0"	1'-0"

NOTES:
1. Heavy construction equipment shall not be used within 5 ft of the top of wall.
2. Walls above 4 ft shall have Durowall reinforcement placed at 2' high intervals.
3. When on rock ledge, base of wall shall be anchored to rock using a 3 ft long #8 dowel @ 4' O.C. Dowel shall have a min. rock embedment of 1 ft.

ST-01

STONE & MORTAR RETAINING WALL
NOT TO SCALE



0 10 20 40
SCALE: 1"=20'-0"

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CALL US TOLL FREE 1-800-962-7962
Industrial Code Rule 753 requires no more than two working days notice, but not more than ten days notice.
diggsafely@nynewyork.com
UFPO

Project # 21-36

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

Engineer:
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

No.	Date	Comments:

SCALE: 1"= 20'
DRAWN BY: AB
DATE: 04/07/22

RETAINING WALL PLAN

RETAINING WALL PLAN
PREPARED FOR
ANA PEREIRA
PROJECT LOCATION
4 Tripp Lane
Town of Armonk Westchester Co., New York

Sheet 1 of 1

Technical Report

prepared for:

Hydro Environmental Solutions
One Deans Bridge Road
Somers NY, 10589
Attention: Bill Canavan

Report Date: 08/25/2022
Client Project ID: 4 Tripp Lane, Armonk, NY 10504
York Project (SDG) No.: 22H0961

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 08/25/2022
Client Project ID: 4 Tripp Lane, Armonk, NY 10504
York Project (SDG) No.: 22H0961

Hydro Environmental Solutions
One Deans Bridge Road
Somers NY, 10589
Attention: Bill Canavan

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on August 16, 2022 and listed below. The project was identified as your project: **4 Tripp Lane, Armonk, NY 10504**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
22H0961-01	S-1	Soil	08/04/2022	08/16/2022
22H0961-02	S-2	Soil	08/04/2022	08/16/2022
22H0961-03	S-3	Soil	08/04/2022	08/16/2022
22H0961-04	S-4	Soil	08/04/2022	08/16/2022
22H0961-05	S-5	Soil	08/04/2022	08/16/2022
22H0961-06	S-6	Soil	08/04/2022	08/16/2022
22H0961-07	Comp-1, C-1	Soil	08/04/2022	08/16/2022
22H0961-08	Comp-2, C-2	Soil	08/04/2022	08/16/2022
22H0961-09	Comp-3, C-3	Soil	08/04/2022	08/16/2022

General Notes for York Project (SDG) No.: 22H0961

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:  **Date:** 08/25/2022

Cassie L. Mosher
Laboratory Manager

Sample Information

Client Sample ID: S-1 **York Sample ID:** 22H0961-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	08/18/2022 16:22	BMC
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 NELAC-NY10854,NELAC-NY12058,NJDEP	08/18/2022 16:22	BMC
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
123-91-1	1,4-Dioxane	ND		ug/kg dry	55	110	1	EPA 8260C Certifications:	08/18/2022 06:36 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
78-93-3	2-Butanone	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC
591-78-6	2-Hexanone	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 16:22	BMC

Sample Information

Client Sample ID: S-1 **York Sample ID:** 22H0961-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive **Log-in Notes:** VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
67-64-1	Acetone	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-02-8	Acrolein	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-13-1	Acrylonitrile	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
71-43-2	Benzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-97-5	Bromochloromethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-27-4	Bromodichloromethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-25-2	Bromoform	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-83-9	Bromomethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-15-0	Carbon disulfide	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
56-23-5	Carbon tetrachloride	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-90-7	Chlorobenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-00-3	Chloroethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
67-66-3	Chloroform	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-87-3	Chloromethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
110-82-7	Cyclohexane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
124-48-1	Dibromochloromethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-95-3	Dibromomethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC

Sample Information

Client Sample ID: S-1 **York Sample ID:** 22H0961-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive **Log-in Notes:** VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	Methylcyclohexane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-47-6	o-Xylene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-42-5	Styrene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
127-18-4	Tetrachloroethylene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-88-3	Toluene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-01-6	Trichloroethylene	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-01-4	Vinyl Chloride	ND		ug/kg dry	2.8	5.5	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1330-20-7	Xylenes, Total	ND		ug/kg dry	8.3	17	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:22	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*119 %*	*77-125*

Sample Information

Client Sample ID: S-1 **York Sample ID:** 22H0961-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.2 %*			*85-120*						
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*95.4 %*			*76-130*						

Total Solids

Log-in Notes: VOA-CONT **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**90.4**		%	0.100	1	SM 2540G	08/22/2022 11:00	08/22/2022 14:38	YR
							Certifications: CTDOH			

Sample Information

Client Sample ID: S-2 **York Sample ID:** 22H0961-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP			
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: S-2 **York Sample ID:** 22H0961-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
123-91-1	1,4-Dioxane	ND		ug/kg dry	57	110	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
78-93-3	2-Butanone	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
591-78-6	2-Hexanone	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
67-64-1	Acetone	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-02-8	Acrolein	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-13-1	Acrylonitrile	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
71-43-2	Benzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-97-5	Bromochloromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-27-4	Bromodichloromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-25-2	Bromoform	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-83-9	Bromomethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-15-0	Carbon disulfide	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
56-23-5	Carbon tetrachloride	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC

Sample Information

Client Sample ID: S-2 **York Sample ID:** 22H0961-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive **Log-in Notes:** VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-90-7	Chlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-00-3	Chloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
67-66-3	Chloroform	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-87-3	Chloromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
110-82-7	Cyclohexane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
124-48-1	Dibromochloromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-95-3	Dibromomethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
79-20-9	Methyl acetate	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-87-2	Methylcyclohexane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-09-2	Methylene chloride	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
95-47-6	o-Xylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	BMC
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	BMC
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 16:50 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC

Sample Information

Client Sample ID: S-2 **York Sample ID:** 22H0961-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
100-42-5	Styrene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
127-18-4	Tetrachloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	Toluene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-01-6	Trichloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-01-4	Vinyl Chloride	ND		ug/kg dry	2.8	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	Xylenes, Total	ND		ug/kg dry	8.5	17	1	EPA 8260C	08/18/2022 06:36	08/18/2022 16:50	BMC
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*118 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*97.2 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*96.4 %*	*76-130*

Total Solids

Log-in Notes: VOA-CONT **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**88.3**		%	0.100	1	SM 2540G	08/22/2022 11:00	08/22/2022 14:38	YR
							Certifications:	CTDOH		

Sample Information

Client Sample ID: S-3 **York Sample ID:** 22H0961-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Sample Information

Client Sample ID: S-3 **York Sample ID:** 22H0961-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	BMC
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 NELAC-NY10854,NELAC-NY12058,NJDEP	BMC
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
123-91-1	1,4-Dioxane	ND		ug/kg dry	53	110	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
78-93-3	2-Butanone	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
591-78-6	2-Hexanone	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC

Sample Information

Client Sample ID: S-3 **York Sample ID:** 22H0961-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive **Log-in Notes:** VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	Acetone	ND		ug/kg dry	5.3	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-02-8	Acrolein	ND		ug/kg dry	5.3	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:20	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: S-3 **York Sample ID:** 22H0961-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
79-20-9	Methyl acetate	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
108-87-2	Methylcyclohexane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
75-09-2	Methylene chloride	ND		ug/kg dry	5.3	11	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
95-47-6	o-Xylene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	08/18/2022 17:20	BMC
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	5.3	11	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	08/18/2022 17:20	BMC
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
100-42-5	Styrene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
127-18-4	Tetrachloroethylene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
108-88-3	Toluene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
79-01-6	Trichloroethylene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
75-01-4	Vinyl Chloride	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	08/18/2022 17:20	BMC
1330-20-7	Xylenes, Total	ND		ug/kg dry	7.9	16	1	EPA 8260C Certifications:	08/18/2022 06:36 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	08/18/2022 17:20	BMC

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*119 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.9 %*	*85-120*

Sample Information

Client Sample ID: S-3 **York Sample ID:** 22H0961-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*95.9 %*			*76-130*						

Total Solids

Log-in Notes: VOA-CONT **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**94.4**		%	0.100	1	SM 2540G	08/22/2022 11:00	08/22/2022 14:38	YR
							Certifications: CTDOH			

Sample Information

Client Sample ID: S-4 **York Sample ID:** 22H0961-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP			
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C	08/18/2022 06:36	08/18/2022 17:49	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: S-4 **York Sample ID:** 22H0961-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
123-91-1	1,4-Dioxane	ND		ug/kg dry	56	110	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
78-93-3	2-Butanone	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
591-78-6	2-Hexanone	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
67-64-1	Acetone	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-02-8	Acrolein	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-13-1	Acrylonitrile	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
71-43-2	Benzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-97-5	Bromochloromethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-27-4	Bromodichloromethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-25-2	Bromoform	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-83-9	Bromomethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-15-0	Carbon disulfide	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
56-23-5	Carbon tetrachloride	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-90-7	Chlorobenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC

Sample Information

Client Sample ID: S-4 **York Sample ID:** 22H0961-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive **Log-in Notes:** VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-00-3	Chloroethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
67-66-3	Chloroform	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-87-3	Chloromethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
110-82-7	Cyclohexane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
124-48-1	Dibromochloromethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
74-95-3	Dibromomethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
79-20-9	Methyl acetate	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-87-2	Methylcyclohexane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-09-2	Methylene chloride	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
95-47-6	o-Xylene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	BMC
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	BMC
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
100-42-5	Styrene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC

Sample Information

Client Sample ID: S-4 **York Sample ID:** 22H0961-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
127-18-4	Tetrachloroethylene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-88-3	Toluene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
79-01-6	Trichloroethylene	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-01-4	Vinyl Chloride	ND		ug/kg dry	2.8	5.6	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
1330-20-7	Xylenes, Total	ND		ug/kg dry	8.4	17	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 17:49 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	BMC

	Surrogate Recoveries	Result		Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*133 %*	S-03	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*95.5 %*		*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*91.9 %*		*76-130*

Total Solids

Log-in Notes: VOA-CONT **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**89.3**		%	0.100	1	SM 2540G Certifications: CTDOH	08/22/2022 11:00	08/22/2022 14:38	YR

Sample Information

Client Sample ID: S-5 **York Sample ID:** 22H0961-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Information

Client Sample ID: S-5 **York Sample ID:** 22H0961-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	BMC
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 NELAC-NY10854,NELAC-NY12058,NJDEP	BMC
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
123-91-1	1,4-Dioxane	ND		ug/kg dry	57	110	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
78-93-3	2-Butanone	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
591-78-6	2-Hexanone	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
67-64-1	Acetone	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC

Sample Information

Client Sample ID: S-5 **York Sample ID:** 22H0961-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-02-8	Acrolein	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: S-5 **York Sample ID:** 22H0961-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	Methylcyclohexane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-47-6	o-Xylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-42-5	Styrene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
127-18-4	Tetrachloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-88-3	Toluene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-01-6	Trichloroethylene	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-01-4	Vinyl Chloride	ND		ug/kg dry	2.8	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1330-20-7	Xylenes, Total	ND		ug/kg dry	8.5	17	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:18	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*119 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*98.2 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*98.1 %*	*76-130*

Sample Information

Client Sample ID: S-5 **York Sample ID:** 22H0961-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Total Solids **Log-in Notes:** VOA-CONT **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**87.8**		%	0.100	1	SM 2540G	08/22/2022 11:00	08/22/2022 14:38	YR
							Certifications: CTDOH			

Sample Information

Client Sample ID: S-6 **York Sample ID:** 22H0961-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive **Log-in Notes:** VOA-CONT **Sample Notes:** **VOA-CONT**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP			
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C	08/18/2022 06:36	08/18/2022 18:47	BMC
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: S-6 **York Sample ID:** 22H0961-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive **Log-in Notes:** VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
123-91-1	1,4-Dioxane	ND		ug/kg dry	57	110	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
78-93-3	2-Butanone	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
591-78-6	2-Hexanone	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-64-1	Acetone	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-02-8	Acrolein	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: S-6 **York Sample ID:** 22H0961-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	Methylcyclohexane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-47-6	o-Xylene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	5.7	11	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-42-5	Styrene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
127-18-4	Tetrachloroethylene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47	BMC CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: S-6 **York Sample ID:** 22H0961-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Volatile Organics, 8260 Comprehensive

Log-in Notes: VOA-CONT **Sample Notes:** VOA-CONT

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-88-3	Toluene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
79-01-6	Trichloroethylene	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
75-01-4	Vinyl Chloride	ND		ug/kg dry	2.9	5.7	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	BMC
1330-20-7	Xylenes, Total	ND		ug/kg dry	8.6	17	1	EPA 8260C Certifications:	08/18/2022 06:36	08/18/2022 18:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	BMC

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*119 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*97.7 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*96.3 %*	*76-130*

Total Solids

Log-in Notes: VOA-CONT **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**87.3**		%	0.100	1	SM 2540G Certifications: CTDOH	08/22/2022 11:00	08/22/2022 14:38	YR

Sample Information

Client Sample ID: Comp-1, C-1 **York Sample ID:** 22H0961-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
92-52-4	1,1-Biphenyl	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 NELAC-NY10854,NJDEP,PADEP	KH

Sample Information

Client Sample ID: Comp-1, C-1 **York Sample ID:** 22H0961-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		mg/kg dry	0.0906	0.181	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,PADEP	08/18/2022 11:44	KH
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,PADEP	08/18/2022 11:44	KH
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,PADEP	08/18/2022 11:44	KH
58-90-2	2,3,4,6-Tetrachlorophenol	ND		mg/kg dry	0.0906	0.181	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
95-95-4	2,4,5-Trichlorophenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
88-06-2	2,4,6-Trichlorophenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
120-83-2	2,4-Dichlorophenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
105-67-9	2,4-Dimethylphenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
51-28-5	2,4-Dinitrophenol	ND		mg/kg dry	0.0906	0.181	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
121-14-2	2,4-Dinitrotoluene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
606-20-2	2,6-Dinitrotoluene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
91-58-7	2-Chloronaphthalene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
95-57-8	2-Chlorophenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
95-48-7	2-Methylphenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
88-74-4	2-Nitroaniline	ND		mg/kg dry	0.0906	0.181	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
88-75-5	2-Nitrophenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
65794-96-9	3- & 4-Methylphenols	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
91-94-1	3,3-Dichlorobenzidine	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
99-09-2	3-Nitroaniline	ND		mg/kg dry	0.0906	0.181	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH

Sample Information

Client Sample ID: Comp-1, C-1 **York Sample ID:** 22H0961-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
534-52-1	4,6-Dinitro-2-methylphenol	ND		mg/kg dry	0.0906	0.181	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
101-55-3	4-Bromophenyl phenyl ether	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
59-50-7	4-Chloro-3-methylphenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
106-47-8	4-Chloroaniline	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
7005-72-3	4-Chlorophenyl phenyl ether	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
100-01-6	4-Nitroaniline	ND		mg/kg dry	0.0906	0.181	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
100-02-7	4-Nitrophenol	ND		mg/kg dry	0.0906	0.181	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
83-32-9	Acenaphthene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
208-96-8	Acenaphthylene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
98-86-2	Acetophenone	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 NELAC-NY10854,NJDEP,PADEP	KH
62-53-3	Aniline	ND		mg/kg dry	0.181	0.363	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 NELAC-NY10854,NJDEP,PADEP	KH
120-12-7	Anthracene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
1912-24-9	Atrazine	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 NELAC-NY10854,NJDEP,PADEP	KH
100-52-7	Benzaldehyde	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 NELAC-NY10854,NJDEP,PADEP	KH
92-87-5	Benzidine	ND		mg/kg dry	0.181	0.363	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,PADEP	KH
56-55-3	**Benzo(a)anthracene**	**0.0905**	J	mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
50-32-8	**Benzo(a)pyrene**	**0.0949**		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
205-99-2	**Benzo(b)fluoranthene**	**0.109**		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
191-24-2	**Benzo(g,h,i)perylene**	**0.0804**	J	mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
207-08-9	**Benzo(k)fluoranthene**	**0.0760**	J	mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH
65-85-0	Benzoic acid	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 NELAC-NY10854,NJDEP,PADEP	KH
100-51-6	Benzyl alcohol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 NELAC-NY10854,NJDEP,PADEP	KH
85-68-7	Benzyl butyl phthalate	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21	08/18/2022 11:44 CTDOH,NELAC-NY10854,NJDEP,PADEP	KH

Sample Information

Client Sample ID: Comp-1, C-1 **York Sample ID:** 22H0961-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
111-91-1	Bis(2-chloroethoxy)methane	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
111-44-4	Bis(2-chloroethyl)ether	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
108-60-1	Bis(2-chloroisopropyl)ether	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
117-81-7	**Bis(2-ethylhexyl)phthalate**	**0.131**		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
105-60-2	Caprolactam	ND		mg/kg dry	0.0906	0.181	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
86-74-8	Carbazole	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
218-01-9	**Chrysene**	**0.0978**		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
53-70-3	Dibenzo(a,h)anthracene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
132-64-9	Dibenzofuran	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
84-66-2	Diethyl phthalate	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
131-11-3	Dimethyl phthalate	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
84-74-2	Di-n-butyl phthalate	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
117-84-0	Di-n-octyl phthalate	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
206-44-0	**Fluoranthene**	**0.151**		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
86-73-7	Fluorene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
118-74-1	Hexachlorobenzene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
77-47-4	Hexachlorocyclopentadiene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
67-72-1	Hexachloroethane	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.0746**	J	mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
78-59-1	Isophorone	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
91-20-3	Naphthalene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH
98-95-3	Nitrobenzene	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 11:44	KH

Sample Information

Client Sample ID: Comp-1, C-1 **York Sample ID:** 22H0961-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
62-75-9	N-Nitrosodimethylamine	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D	08/17/2022 13:21	08/18/2022 11:44	KH
								Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
621-64-7	N-nitroso-di-n-propylamine	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D	08/17/2022 13:21	08/18/2022 11:44	KH
								Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
86-30-6	N-Nitrosodiphenylamine	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D	08/17/2022 13:21	08/18/2022 11:44	KH
								Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
87-86-5	Pentachlorophenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D	08/17/2022 13:21	08/18/2022 11:44	KH
								Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
85-01-8	**Phenanthrene**	**0.0507**	J	mg/kg dry	0.0454	0.0906	2	EPA 8270D	08/17/2022 13:21	08/18/2022 11:44	KH
								Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
108-95-2	Phenol	ND		mg/kg dry	0.0454	0.0906	2	EPA 8270D	08/17/2022 13:21	08/18/2022 11:44	KH
								Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
129-00-0	**Pyrene**	**0.122**		mg/kg dry	0.0454	0.0906	2	EPA 8270D	08/17/2022 13:21	08/18/2022 11:44	KH
								Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*30.5 %*	*20-108*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*31.0 %*	*23-114*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*42.2 %*	*22-108*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*34.8 %*	*21-113*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*39.9 %*	*19-110*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*40.1 %*	*24-116*

Pesticides, 8081 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	**4,4'-DDD**	**2.25**		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
72-55-9	**4,4'-DDE**	**8.87**		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
50-29-3	4,4'-DDT	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
309-00-2	Aldrin	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
319-84-6	alpha-BHC	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
5103-71-9	**alpha-Chlordane**	**49.2**		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	NELAC-NY10854,NJDEP		
319-85-7	beta-BHC	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
319-86-8	delta-BHC	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: Comp-1, C-1 **York Sample ID:** 22H0961-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Pesticides, 8081 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
60-57-1	**Dieldrin**	**5.12**		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
959-98-8	Endosulfan I	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
33213-65-9	Endosulfan II	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854		
1031-07-8	Endosulfan sulfate	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
72-20-8	Endrin	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7421-93-4	Endrin aldehyde	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
53494-70-5	Endrin ketone	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
58-89-9	gamma-BHC (Lindane)	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
5566-34-7	**gamma-Chlordane**	**42.8**		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	NELAC-NY10854,NJDEP		
76-44-8	Heptachlor	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
1024-57-3	Heptachlor epoxide	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
72-43-5	Methoxychlor	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
8001-35-2	Toxaphene	ND		ug/kg dry	179	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:34	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*58.7 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*40.8 %*	*30-150*

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0181	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:29	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0181	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:29	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0181	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:29	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0181	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:29	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0181	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:29	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		

Sample Information

Client Sample ID: Comp-1, C-1 **York Sample ID:** 22H0961-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0181	1	EPA 8082A Certifications:	08/17/2022 13:34 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/18/2022 19:29	BJ
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0181	1	EPA 8082A Certifications:	08/17/2022 13:34 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/18/2022 19:29	BJ
1336-36-3	* Total PCBs	ND		mg/kg dry	0.0181	1	EPA 8082A Certifications:	08/17/2022 13:34	08/18/2022 19:29	BJ

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*51.0 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*65.5 %*	*30-120*

Metals, Target Analyte

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7429-90-5	**Aluminum**	**16100**		mg/kg dry	5.99	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7440-36-0	Antimony	ND		mg/kg dry	3.00	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7440-38-2	**Arsenic**	**5.32**		mg/kg dry	1.80	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7440-39-3	**Barium**	**117**		mg/kg dry	3.00	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7440-41-7	Beryllium	ND		mg/kg dry	0.060	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7440-43-9	**Cadmium**	**0.485**		mg/kg dry	0.360	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7440-70-2	**Calcium**	**17700**	B	mg/kg dry	5.99	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7440-47-3	**Chromium**	**30.0**		mg/kg dry	0.599	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7440-48-4	**Cobalt**	**11.3**		mg/kg dry	0.480	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7440-50-8	**Copper**	**59.1**		mg/kg dry	2.40	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7439-89-6	**Iron**	**21600**		mg/kg dry	30.0	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7439-92-1	**Lead**	**92.6**		mg/kg dry	0.599	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7439-95-4	**Magnesium**	**11600**		mg/kg dry	5.99	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL
7439-96-5	**Manganese**	**421**		mg/kg dry	0.599	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:08	AJL

Sample Information

Client Sample ID: Comp-1, C-1 **York Sample ID:** 22H0961-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Metals, Target Analyte

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-02-0	**Nickel**	**17.9**		mg/kg dry	1.20	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:08	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-09-7	**Potassium**	**2790**	B	mg/kg dry	5.99	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:08	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7782-49-2	Selenium	ND		mg/kg dry	3.00	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:08	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-22-4	Silver	ND		mg/kg dry	0.599	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:08	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-23-5	Sodium	ND		mg/kg dry	59.9	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:08	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-28-0	Thallium	ND		mg/kg dry	3.00	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:08	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-62-2	**Vanadium**	**39.5**		mg/kg dry	1.20	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:08	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-66-6	**Zinc**	**103**		mg/kg dry	3.00	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:08	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Mercury by 7473

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	**Mercury**	**0.139**		mg/kg dry	0.0336	1	EPA 7473	08/25/2022 09:56	08/25/2022 13:42	MR
							Certifications:	CTDOH,NJDEP,NELAC-NY10854,PADEP		

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**89.4**		%	0.100	1	SM 2540G	08/19/2022 16:46	08/19/2022 19:48	AJS
							Certifications:	CTDOH		

Sample Information

Client Sample ID: Comp-2, C-2 **York Sample ID:** 22H0961-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Information

Client Sample ID: Comp-2, C-2 **York Sample ID:** 22H0961-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
92-52-4	1,1-Biphenyl	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		mg/kg dry	0.0894	0.179	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,PADEP	08/18/2022 12:15	KH
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,PADEP	08/18/2022 12:15	KH
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,PADEP	08/18/2022 12:15	KH
58-90-2	2,3,4,6-Tetrachlorophenol	ND		mg/kg dry	0.0894	0.179	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
95-95-4	2,4,5-Trichlorophenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
88-06-2	2,4,6-Trichlorophenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
120-83-2	2,4-Dichlorophenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
105-67-9	2,4-Dimethylphenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
51-28-5	2,4-Dinitrophenol	ND		mg/kg dry	0.0894	0.179	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
121-14-2	2,4-Dinitrotoluene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
606-20-2	2,6-Dinitrotoluene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
91-58-7	2-Chloronaphthalene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
95-57-8	2-Chlorophenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
95-48-7	2-Methylphenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
88-74-4	2-Nitroaniline	ND		mg/kg dry	0.0894	0.179	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
88-75-5	2-Nitrophenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
65794-96-9	3- & 4-Methylphenols	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
91-94-1	3,3-Dichlorobenzidine	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
99-09-2	3-Nitroaniline	ND		mg/kg dry	0.0894	0.179	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH

Sample Information

Client Sample ID: Comp-2, C-2 **York Sample ID:** 22H0961-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
534-52-1	4,6-Dinitro-2-methylphenol	ND		mg/kg dry	0.0894	0.179	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
101-55-3	4-Bromophenyl phenyl ether	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
59-50-7	4-Chloro-3-methylphenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
106-47-8	4-Chloroaniline	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
7005-72-3	4-Chlorophenyl phenyl ether	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
100-01-6	4-Nitroaniline	ND		mg/kg dry	0.0894	0.179	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
100-02-7	4-Nitrophenol	ND		mg/kg dry	0.0894	0.179	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
83-32-9	Acenaphthene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
208-96-8	Acenaphthylene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
98-86-2	Acetophenone	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
62-53-3	Aniline	ND		mg/kg dry	0.179	0.358	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
120-12-7	Anthracene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
1912-24-9	Atrazine	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
100-52-7	Benzaldehyde	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
92-87-5	Benzidine	ND		mg/kg dry	0.179	0.358	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,PADEP	08/18/2022 12:15	KH
56-55-3	**Benzo(a)anthracene**	**0.186**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
50-32-8	**Benzo(a)pyrene**	**0.214**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
205-99-2	**Benzo(b)fluoranthene**	**0.210**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
191-24-2	**Benzo(g,h,i)perylene**	**0.163**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
207-08-9	**Benzo(k)fluoranthene**	**0.161**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
65-85-0	Benzoic acid	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
100-51-6	Benzyl alcohol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
85-68-7	Benzyl butyl phthalate	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH

Sample Information

Client Sample ID: Comp-2, C-2 **York Sample ID:** 22H0961-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
111-91-1	Bis(2-chloroethoxy)methane	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
111-44-4	Bis(2-chloroethyl)ether	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
108-60-1	Bis(2-chloroisopropyl)ether	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
117-81-7	Bis(2-ethylhexyl)phthalate	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
105-60-2	Caprolactam	ND		mg/kg dry	0.0894	0.179	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
86-74-8	Carbazole	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
218-01-9	**Chrysene**	**0.180**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
53-70-3	**Dibenzo(a,h)anthracene**	**0.0522**	J	mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
132-64-9	Dibenzofuran	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
84-66-2	Diethyl phthalate	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
131-11-3	Dimethyl phthalate	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
84-74-2	Di-n-butyl phthalate	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
117-84-0	Di-n-octyl phthalate	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
206-44-0	**Fluoranthene**	**0.288**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
86-73-7	Fluorene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
118-74-1	Hexachlorobenzene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
77-47-4	Hexachlorocyclopentadiene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
67-72-1	Hexachloroethane	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.138**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
78-59-1	Isophorone	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
91-20-3	Naphthalene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
98-95-3	Nitrobenzene	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH

Sample Information

Client Sample ID: Comp-2, C-2 **York Sample ID:** 22H0961-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
62-75-9	N-Nitrosodimethylamine	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
621-64-7	N-nitroso-di-n-propylamine	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
86-30-6	N-Nitrosodiphenylamine	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
87-86-5	Pentachlorophenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
85-01-8	**Phenanthrene**	**0.0922**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
108-95-2	Phenol	ND		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH
129-00-0	**Pyrene**	**0.255**		mg/kg dry	0.0448	0.0894	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:15	KH

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*27.6 %*	*20-108*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*26.8 %*	*23-114*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*33.8 %*	*22-108*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*28.9 %*	*21-113*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*32.4 %*	*19-110*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*35.2 %*	*24-116*

Pesticides, 8081 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/kg dry	1.79	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 06:51	BJ
72-55-9	**4,4'-DDE**	**11.4**		ug/kg dry	1.79	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 06:51	BJ
50-29-3	4,4'-DDT	ND		ug/kg dry	1.79	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 06:51	BJ
309-00-2	Aldrin	ND		ug/kg dry	1.79	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 06:51	BJ
319-84-6	alpha-BHC	ND		ug/kg dry	1.79	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 06:51	BJ
5103-71-9	**alpha-Chlordane**	**11.2**		ug/kg dry	1.79	5	EPA 8081B Certifications:	08/17/2022 13:34 NELAC-NY10854,NJDEP	08/20/2022 06:51	BJ
319-85-7	beta-BHC	ND		ug/kg dry	1.79	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 06:51	BJ
319-86-8	delta-BHC	ND		ug/kg dry	1.79	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 06:51	BJ

Sample Information

Client Sample ID: Comp-2, C-2 **York Sample ID:** 22H0961-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Pesticides, 8081 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
60-57-1	**Dieldrin**	**2.23**		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
959-98-8	Endosulfan I	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
33213-65-9	Endosulfan II	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854		
1031-07-8	Endosulfan sulfate	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
72-20-8	Endrin	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7421-93-4	Endrin aldehyde	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
53494-70-5	Endrin ketone	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
58-89-9	gamma-BHC (Lindane)	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
5566-34-7	**gamma-Chlordane**	**9.28**		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	NELAC-NY10854,NJDEP		
76-44-8	Heptachlor	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
1024-57-3	Heptachlor epoxide	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
72-43-5	Methoxychlor	ND		ug/kg dry	1.79	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
8001-35-2	Toxaphene	ND		ug/kg dry	179	5	EPA 8081B	08/17/2022 13:34	08/20/2022 06:51	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*65.5 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*67.6 %*	*30-150*

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0180	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:43	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0180	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:43	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0180	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:43	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0180	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:43	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0180	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:43	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		

Sample Information

Client Sample ID: Comp-2, C-2 **York Sample ID:** 22H0961-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0180	1	EPA 8082A Certifications:	08/17/2022 13:34 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/18/2022 19:43	BJ
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0180	1	EPA 8082A Certifications:	08/17/2022 13:34 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/18/2022 19:43	BJ
1336-36-3	* Total PCBs	ND		mg/kg dry	0.0180	1	EPA 8082A Certifications:	08/17/2022 13:34	08/18/2022 19:43	BJ

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*60.0 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*72.5 %*	*30-120*

Metals, Target Analyte

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7429-90-5	**Aluminum**	**14000**		mg/kg dry	5.82	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7440-36-0	Antimony	ND		mg/kg dry	2.91	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7440-38-2	**Arsenic**	**3.37**		mg/kg dry	1.75	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7440-39-3	**Barium**	**104**		mg/kg dry	2.91	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7440-41-7	Beryllium	ND		mg/kg dry	0.058	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7440-43-9	Cadmium	ND		mg/kg dry	0.349	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7440-70-2	**Calcium**	**9760**	B	mg/kg dry	5.82	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7440-47-3	**Chromium**	**24.0**		mg/kg dry	0.582	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7440-48-4	**Cobalt**	**10.3**		mg/kg dry	0.466	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7440-50-8	**Copper**	**30.2**		mg/kg dry	2.33	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7439-89-6	**Iron**	**17800**		mg/kg dry	29.1	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7439-92-1	**Lead**	**54.5**		mg/kg dry	0.582	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7439-95-4	**Magnesium**	**7390**		mg/kg dry	5.82	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL
7439-96-5	**Manganese**	**321**		mg/kg dry	0.582	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:10	AJL

Sample Information

Client Sample ID: **Comp-2, C-2** **York Sample ID:** **22H0961-08**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Metals, Target Analyte

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-02-0	**Nickel**	**13.3**		mg/kg dry	1.16	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:10	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-09-7	**Potassium**	**2310**	B	mg/kg dry	5.82	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:10	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7782-49-2	Selenium	ND		mg/kg dry	2.91	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:10	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-22-4	Silver	ND		mg/kg dry	0.582	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:10	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-23-5	Sodium	ND		mg/kg dry	58.2	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:10	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-28-0	Thallium	ND		mg/kg dry	2.91	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:10	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-62-2	**Vanadium**	**34.5**		mg/kg dry	1.16	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:10	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7440-66-6	**Zinc**	**76.2**		mg/kg dry	2.91	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:10	AJL
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Mercury by 7473

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	**Mercury**	**0.109**		mg/kg dry	0.0326	1	EPA 7473	08/25/2022 09:56	08/25/2022 13:51	MR
							Certifications:	CTDOH,NJDEP,NELAC-NY10854,PADEP		

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**92.1**		%	0.100	1	SM 2540G	08/19/2022 16:46	08/19/2022 19:48	AJS
							Certifications:	CTDOH		

Sample Information

Client Sample ID: **Comp-3, C-3** **York Sample ID:** **22H0961-09**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Information

Client Sample ID: Comp-3, C-3 **York Sample ID:** 22H0961-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
92-52-4	1,1-Biphenyl	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		mg/kg dry	0.0909	0.182	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,PADEP	08/18/2022 12:45	KH
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,PADEP	08/18/2022 12:45	KH
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,PADEP	08/18/2022 12:45	KH
58-90-2	2,3,4,6-Tetrachlorophenol	ND		mg/kg dry	0.0909	0.182	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
95-95-4	2,4,5-Trichlorophenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
88-06-2	2,4,6-Trichlorophenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
120-83-2	2,4-Dichlorophenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
105-67-9	2,4-Dimethylphenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
51-28-5	2,4-Dinitrophenol	ND		mg/kg dry	0.0909	0.182	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
121-14-2	2,4-Dinitrotoluene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
606-20-2	2,6-Dinitrotoluene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
91-58-7	2-Chloronaphthalene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
95-57-8	2-Chlorophenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
95-48-7	2-Methylphenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
88-74-4	2-Nitroaniline	ND		mg/kg dry	0.0909	0.182	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
88-75-5	2-Nitrophenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
65794-96-9	3- & 4-Methylphenols	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
91-94-1	3,3-Dichlorobenzidine	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
99-09-2	3-Nitroaniline	ND		mg/kg dry	0.0909	0.182	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH

Sample Information

Client Sample ID: Comp-3, C-3 **York Sample ID:** 22H0961-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
534-52-1	4,6-Dinitro-2-methylphenol	ND		mg/kg dry	0.0909	0.182	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
101-55-3	4-Bromophenyl phenyl ether	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
59-50-7	4-Chloro-3-methylphenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
106-47-8	4-Chloroaniline	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
7005-72-3	4-Chlorophenyl phenyl ether	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
100-01-6	4-Nitroaniline	ND		mg/kg dry	0.0909	0.182	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
100-02-7	4-Nitrophenol	ND		mg/kg dry	0.0909	0.182	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
83-32-9	Acenaphthene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
208-96-8	Acenaphthylene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
98-86-2	Acetophenone	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
62-53-3	Aniline	ND		mg/kg dry	0.182	0.364	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
120-12-7	**Anthracene**	**0.0589**	J	mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
1912-24-9	Atrazine	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
100-52-7	Benzaldehyde	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
92-87-5	Benzidine	ND		mg/kg dry	0.182	0.364	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,PADEP	08/18/2022 12:45	KH
56-55-3	**Benzo(a)anthracene**	**0.325**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
50-32-8	**Benzo(a)pyrene**	**0.310**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
205-99-2	**Benzo(b)fluoranthene**	**0.376**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
191-24-2	**Benzo(g,h,i)perylene**	**0.227**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
207-08-9	**Benzo(k)fluoranthene**	**0.281**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
65-85-0	Benzoic acid	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
100-51-6	Benzyl alcohol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
85-68-7	Benzyl butyl phthalate	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH

Sample Information

Client Sample ID: Comp-3, C-3 **York Sample ID:** 22H0961-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
111-91-1	Bis(2-chloroethoxy)methane	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
111-44-4	Bis(2-chloroethyl)ether	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
108-60-1	Bis(2-chloroisopropyl)ether	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
117-81-7	Bis(2-ethylhexyl)phthalate	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
105-60-2	Caprolactam	ND		mg/kg dry	0.0909	0.182	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
86-74-8	**Carbazole**	**0.0480**	J	mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
218-01-9	**Chrysene**	**0.375**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
53-70-3	**Dibenzo(a,h)anthracene**	**0.0836**	J	mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
132-64-9	Dibenzofuran	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
84-66-2	Diethyl phthalate	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
131-11-3	Dimethyl phthalate	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
84-74-2	Di-n-butyl phthalate	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
117-84-0	Di-n-octyl phthalate	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
206-44-0	**Fluoranthene**	**0.651**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
86-73-7	Fluorene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
118-74-1	Hexachlorobenzene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
77-47-4	Hexachlorocyclopentadiene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
67-72-1	Hexachloroethane	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.201**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
78-59-1	Isophorone	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
91-20-3	Naphthalene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
98-95-3	Nitrobenzene	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH

Sample Information

Client Sample ID: Comp-3, C-3 **York Sample ID:** 22H0961-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 SVOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
62-75-9	N-Nitrosodimethylamine	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
621-64-7	N-nitroso-di-n-propylamine	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
86-30-6	N-Nitrosodiphenylamine	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
87-86-5	Pentachlorophenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
85-01-8	**Phenanthrene**	**0.302**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
108-95-2	Phenol	ND		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH
129-00-0	**Pyrene**	**0.515**		mg/kg dry	0.0456	0.0909	2	EPA 8270D Certifications:	08/17/2022 13:21 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 12:45	KH

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*22.1 %*	*20-108*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*27.1 %*	*23-114*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*35.6 %*	*22-108*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*29.8 %*	*21-113*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*36.0 %*	*19-110*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*35.2 %*	*24-116*

Pesticides, 8081 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/kg dry	1.80	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 07:10	BJ
72-55-9	**4,4'-DDE**	**1.91**		ug/kg dry	1.80	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 07:10	BJ
50-29-3	4,4'-DDT	ND		ug/kg dry	1.80	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 07:10	BJ
309-00-2	Aldrin	ND		ug/kg dry	1.80	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 07:10	BJ
319-84-6	alpha-BHC	ND		ug/kg dry	1.80	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 07:10	BJ
5103-71-9	**alpha-Chlordane**	**12.8**		ug/kg dry	1.80	5	EPA 8081B Certifications:	08/17/2022 13:34 NELAC-NY10854,NJDEP	08/20/2022 07:10	BJ
319-85-7	beta-BHC	ND		ug/kg dry	1.80	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 07:10	BJ
319-86-8	delta-BHC	ND		ug/kg dry	1.80	5	EPA 8081B Certifications:	08/17/2022 13:34 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/20/2022 07:10	BJ

Sample Information

Client Sample ID: Comp-3, C-3 **York Sample ID:** 22H0961-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Pesticides, 8081 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
60-57-1	**Dieldrin**	**2.55**		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
959-98-8	Endosulfan I	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
33213-65-9	Endosulfan II	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854		
1031-07-8	Endosulfan sulfate	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
72-20-8	Endrin	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
7421-93-4	Endrin aldehyde	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
53494-70-5	Endrin ketone	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
58-89-9	gamma-BHC (Lindane)	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
5566-34-7	**gamma-Chlordane**	**9.20**		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	NELAC-NY10854,NJDEP		
76-44-8	Heptachlor	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
1024-57-3	Heptachlor epoxide	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
72-43-5	Methoxychlor	ND		ug/kg dry	1.80	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		
8001-35-2	Toxaphene	ND		ug/kg dry	180	5	EPA 8081B	08/17/2022 13:34	08/20/2022 07:10	BJ
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*45.4 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*46.0 %*	*30-150*

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0182	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:56	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0182	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:56	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0182	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:56	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0182	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:56	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0182	1	EPA 8082A	08/17/2022 13:34	08/18/2022 19:56	BJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		

Sample Information

Client Sample ID: Comp-3, C-3 **York Sample ID:** 22H0961-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0182	1	EPA 8082A Certifications:	08/17/2022 13:34 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/18/2022 19:56	BJ
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0182	1	EPA 8082A Certifications:	08/17/2022 13:34 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/18/2022 19:56	BJ
1336-36-3	* Total PCBs	ND		mg/kg dry	0.0182	1	EPA 8082A Certifications:	08/17/2022 13:34	08/18/2022 19:56	BJ

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*40.5 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*47.5 %*	*30-120*

Metals, Target Analyte

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7429-90-5	**Aluminum**	**14900**		mg/kg dry	5.73	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7440-36-0	Antimony	ND		mg/kg dry	2.87	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7440-38-2	**Arsenic**	**2.77**		mg/kg dry	1.72	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7440-39-3	**Barium**	**104**		mg/kg dry	2.87	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7440-41-7	Beryllium	ND		mg/kg dry	0.057	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7440-43-9	**Cadmium**	**0.963**		mg/kg dry	0.344	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7440-70-2	**Calcium**	**8630**	B	mg/kg dry	5.73	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7440-47-3	**Chromium**	**26.8**		mg/kg dry	0.573	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7440-48-4	**Cobalt**	**11.2**		mg/kg dry	0.459	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7440-50-8	**Copper**	**32.3**		mg/kg dry	2.29	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7439-89-6	**Iron**	**19900**		mg/kg dry	28.7	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7439-92-1	**Lead**	**62.9**		mg/kg dry	0.573	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7439-95-4	**Magnesium**	**6660**		mg/kg dry	5.73	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL
7439-96-5	**Manganese**	**373**		mg/kg dry	0.573	1	EPA 6010D Certifications:	08/16/2022 12:00 CTDOH,NELAC-NY10854,NJDEP,PADEP	08/18/2022 18:12	AJL

Sample Information

Client Sample ID: **Comp-3, C-3** **York Sample ID:** **22H0961-09**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
22H0961	4 Tripp Lane, Armonk, NY 10504	Soil	August 4, 2022 3:00 pm	08/16/2022

Metals, Target Analyte

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-02-0	**Nickel**	**12.3**		mg/kg dry	1.15	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:12	AJL
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-09-7	**Potassium**	**1420**	B	mg/kg dry	5.73	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:12	AJL
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7782-49-2	Selenium	ND		mg/kg dry	2.87	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:12	AJL
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-22-4	Silver	ND		mg/kg dry	0.573	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:12	AJL
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-23-5	Sodium	ND		mg/kg dry	57.3	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:12	AJL
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-28-0	Thallium	ND		mg/kg dry	2.87	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:12	AJL
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-62-2	**Vanadium**	**38.9**		mg/kg dry	1.15	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:12	AJL
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-66-6	**Zinc**	**90.7**		mg/kg dry	2.87	1	EPA 6010D	08/16/2022 12:00	08/18/2022 18:12	AJL
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			

Mercury by 7473

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	**Mercury**	**0.115**		mg/kg dry	0.0333	1	EPA 7473	08/25/2022 09:56	08/25/2022 14:00	MR
							Certifications: CTDOH,NJDEP,NELAC-NY10854,PADEP			

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**90.2**		%	0.100	1	SM 2540G	08/19/2022 16:46	08/19/2022 19:48	AJS
							Certifications: CTDOH			

Analytical Batch Summary

Batch ID: BH20963 **Preparation Method:** EPA 3050B **Prepared By:** FG

YORK Sample ID	Client Sample ID	Preparation Date
22H0961-07	Comp-1, C-1	08/16/22
22H0961-08	Comp-2, C-2	08/16/22
22H0961-09	Comp-3, C-3	08/16/22
BH20963-BLK1	Blank	08/16/22
BH20963-DUP1	Duplicate	08/16/22
BH20963-MS1	Matrix Spike	08/16/22
BH20963-PS1	Post Spike	08/16/22
BH20963-SRM1	Reference	08/16/22

Batch ID: BH21078 **Preparation Method:** EPA 3546 SVOA **Prepared By:** KEO

YORK Sample ID	Client Sample ID	Preparation Date
22H0961-07	Comp-1, C-1	08/17/22
22H0961-08	Comp-2, C-2	08/17/22
22H0961-09	Comp-3, C-3	08/17/22
BH21078-BLK1	Blank	08/17/22
BH21078-BS1	LCS	08/17/22
BH21078-MS1	Matrix Spike	08/17/22
BH21078-MSD1	Matrix Spike Dup	08/17/22

Batch ID: BH21081 **Preparation Method:** EPA 3550C **Prepared By:** KEO

YORK Sample ID	Client Sample ID	Preparation Date
22H0961-07	Comp-1, C-1	08/17/22
22H0961-07	Comp-1, C-1	08/17/22
22H0961-08	Comp-2, C-2	08/17/22
22H0961-08	Comp-2, C-2	08/17/22
22H0961-09	Comp-3, C-3	08/17/22
22H0961-09	Comp-3, C-3	08/17/22
BH21081-BLK1	Blank	08/17/22
BH21081-BLK2	Blank	08/17/22
BH21081-BS1	LCS	08/17/22
BH21081-BS2	LCS	08/17/22

Batch ID: BH21134 **Preparation Method:** EPA 5035A **Prepared By:** BMC

YORK Sample ID	Client Sample ID	Preparation Date
22H0961-01	S-1	08/18/22
22H0961-02	S-2	08/18/22
22H0961-03	S-3	08/18/22
22H0961-04	S-4	08/18/22
22H0961-05	S-5	08/18/22
22H0961-06	S-6	08/18/22
BH21134-BLK1	Blank	08/18/22

BH21134-BS1	LCS	08/18/22
BH21134-BSD1	LCS Dup	08/18/22

Batch ID: BH21246 **Preparation Method:** % Solids Prep **Prepared By:** AJS

YORK Sample ID	Client Sample ID	Preparation Date
22H0961-07	Comp-1, C-1	08/19/22
22H0961-08	Comp-2, C-2	08/19/22
22H0961-09	Comp-3, C-3	08/19/22
BH21246-DUP1	Duplicate	08/19/22

Batch ID: BH21321 **Preparation Method:** % Solids Prep **Prepared By:** YR

YORK Sample ID	Client Sample ID	Preparation Date
22H0961-01	S-1	08/22/22
22H0961-02	S-2	08/22/22
22H0961-03	S-3	08/22/22
22H0961-04	S-4	08/22/22
22H0961-05	S-5	08/22/22
22H0961-06	S-6	08/22/22
BH21321-DUP1	Duplicate	08/22/22
BH21321-DUP2	Duplicate	08/22/22

Batch ID: BH21519 **Preparation Method:** EPA 7473 soil **Prepared By:** MR

YORK Sample ID	Client Sample ID	Preparation Date
22H0961-07	Comp-1, C-1	08/25/22
22H0961-08	Comp-2, C-2	08/25/22
22H0961-09	Comp-3, C-3	08/25/22
BH21519-BLK1	Blank	08/25/22
BH21519-DUP1	Duplicate	08/25/22
BH21519-MS1	Matrix Spike	08/25/22
BH21519-SRM1	Reference	08/25/22

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21134 - EPA 5035A											
Blank (BH21134-BLK1)											Prepared & Analyzed: 08/18/2022
1,1,1,2-Tetrachloroethane	ND	5.0	ug/kg wet								
1,1,1-Trichloroethane	ND	5.0	"								
1,1,2,2-Tetrachloroethane	ND	5.0	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"								
1,1,2-Trichloroethane	ND	5.0	"								
1,1-Dichloroethane	ND	5.0	"								
1,1-Dichloroethylene	ND	5.0	"								
1,2,3-Trichlorobenzene	ND	5.0	"								
1,2,3-Trichloropropane	ND	5.0	"								
1,2,4-Trichlorobenzene	ND	5.0	"								
1,2,4-Trimethylbenzene	ND	5.0	"								
1,2-Dibromo-3-chloropropane	ND	5.0	"								
1,2-Dibromoethane	ND	5.0	"								
1,2-Dichlorobenzene	ND	5.0	"								
1,2-Dichloroethane	ND	5.0	"								
1,2-Dichloropropane	ND	5.0	"								
1,3,5-Trimethylbenzene	ND	5.0	"								
1,3-Dichlorobenzene	ND	5.0	"								
1,4-Dichlorobenzene	ND	5.0	"								
1,4-Dioxane	ND	100	"								
2-Butanone	ND	5.0	"								
2-Hexanone	ND	5.0	"								
4-Methyl-2-pentanone	ND	5.0	"								
Acetone	ND	10	"								
Acrolein	ND	10	"								
Acrylonitrile	ND	5.0	"								
Benzene	ND	5.0	"								
Bromochloromethane	ND	5.0	"								
Bromodichloromethane	ND	5.0	"								
Bromoform	ND	5.0	"								
Bromomethane	ND	5.0	"								
Carbon disulfide	ND	5.0	"								
Carbon tetrachloride	ND	5.0	"								
Chlorobenzene	ND	5.0	"								
Chloroethane	ND	5.0	"								
Chloroform	ND	5.0	"								
Chloromethane	ND	5.0	"								
cis-1,2-Dichloroethylene	ND	5.0	"								
cis-1,3-Dichloropropylene	ND	5.0	"								
Cyclohexane	ND	5.0	"								
Dibromochloromethane	ND	5.0	"								
Dibromomethane	ND	5.0	"								
Dichlorodifluoromethane	ND	5.0	"								
Ethyl Benzene	ND	5.0	"								
Hexachlorobutadiene	ND	5.0	"								
Isopropylbenzene	ND	5.0	"								
Methyl acetate	ND	5.0	"								
Methyl tert-butyl ether (MTBE)	ND	5.0	"								
Methylcyclohexane	ND	5.0	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21134 - EPA 5035A											
Blank (BH21134-BLK1)											Prepared & Analyzed: 08/18/2022
Methylene chloride	ND	10	ug/kg wet								
n-Butylbenzene	ND	5.0	"								
n-Propylbenzene	ND	5.0	"								
o-Xylene	ND	5.0	"								
p- & m- Xylenes	ND	10	"								
p-Isopropyltoluene	ND	5.0	"								
sec-Butylbenzene	ND	5.0	"								
Styrene	ND	5.0	"								
tert-Butyl alcohol (TBA)	ND	5.0	"								
tert-Butylbenzene	ND	5.0	"								
Tetrachloroethylene	ND	5.0	"								
Toluene	ND	5.0	"								
trans-1,2-Dichloroethylene	ND	5.0	"								
trans-1,3-Dichloropropylene	ND	5.0	"								
Trichloroethylene	ND	5.0	"								
Trichlorofluoromethane	ND	5.0	"								
Vinyl Chloride	ND	5.0	"								
Xylenes, Total	ND	15	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*52.5*		*ug/L*	*50.0*		*105*	*77-125*				
Surrogate: SURR: Toluene-d8	*48.3*		*"*	*50.0*		*96.6*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*47.6*		*"*	*50.0*		*95.2*	*76-130*				
LCS (BH21134-BS1)											Prepared & Analyzed: 08/18/2022
1,1,1,2-Tetrachloroethane	48.0		ug/L	50.0		96.0	75-129				
1,1,1-Trichloroethane	46.5		"	50.0		93.1	71-137				
1,1,2,2-Tetrachloroethane	44.6		"	50.0		89.1	79-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	42.5		"	50.0		85.0	58-146				
1,1,2-Trichloroethane	45.3		"	50.0		90.7	83-123				
1,1-Dichloroethane	44.8		"	50.0		89.5	75-130				
1,1-Dichloroethylene	44.7		"	50.0		89.4	64-137				
1,2,3-Trichlorobenzene	43.6		"	50.0		87.1	81-140				
1,2,3-Trichloropropane	47.4		"	50.0		94.8	81-126				
1,2,4-Trichlorobenzene	44.9		"	50.0		89.7	80-141				
1,2,4-Trimethylbenzene	44.5		"	50.0		89.1	84-125				
1,2-Dibromo-3-chloropropane	40.9		"	50.0		81.8	74-142				
1,2-Dibromoethane	46.8		"	50.0		93.6	86-123				
1,2-Dichlorobenzene	43.3		"	50.0		86.7	85-122				
1,2-Dichloroethane	48.4		"	50.0		96.9	71-133				
1,2-Dichloropropane	44.2		"	50.0		88.4	81-122				
1,3,5-Trimethylbenzene	43.1		"	50.0		86.3	82-126				
1,3-Dichlorobenzene	43.6		"	50.0		87.1	84-124				
1,4-Dichlorobenzene	43.2		"	50.0		86.3	84-124				
1,4-Dioxane	909		"	1050		86.6	10-228				
2-Butanone	44.0		"	50.0		87.9	58-147				
2-Hexanone	44.9		"	50.0		89.8	70-139				
4-Methyl-2-pentanone	45.3		"	50.0		90.6	72-132				
Acetone	54.6		"	50.0		109	36-155				
Acrolein	46.0		"	50.0		91.9	10-238				
Acrylonitrile	46.6		"	50.0		93.3	66-141				
Benzene	44.4		"	50.0		88.7	77-127				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21134 - EPA 5035A											
LCS (BH21134-BS1)								Prepared & Analyzed: 08/18/2022			
Bromochloromethane	47.6		ug/L	50.0		95.2	74-129				
Bromodichloromethane	46.6		"	50.0		93.2	81-124				
Bromoform	45.4		"	50.0		90.7	80-136				
Bromomethane	38.5		"	50.0		77.0	32-177				
Carbon disulfide	41.6		"	50.0		83.1	10-136				
Carbon tetrachloride	49.2		"	50.0		98.5	66-143				
Chlorobenzene	46.0		"	50.0		92.1	86-120				
Chloroethane	43.3		"	50.0		86.5	51-142				
Chloroform	47.3		"	50.0		94.6	76-131				
Chloromethane	35.9		"	50.0		71.8	49-132				
cis-1,2-Dichloroethylene	45.0		"	50.0		90.1	74-132				
cis-1,3-Dichloropropylene	46.3		"	50.0		92.6	81-129				
Cyclohexane	38.8		"	50.0		77.6	70-130				
Dibromochloromethane	48.9		"	50.0		97.7	10-200				
Dibromomethane	44.7		"	50.0		89.5	83-124				
Dichlorodifluoromethane	28.3		"	50.0		56.6	28-158				
Ethyl Benzene	44.7		"	50.0		89.3	84-125				
Hexachlorobutadiene	44.7		"	50.0		89.4	83-133				
Isopropylbenzene	44.5		"	50.0		88.9	81-127				
Methyl acetate	38.0		"	50.0		76.0	41-143				
Methyl tert-butyl ether (MTBE)	37.4		"	50.0		74.9	74-131				
Methylcyclohexane	39.0		"	50.0		77.9	70-130				
Methylene chloride	43.6		"	50.0		87.2	57-141				
n-Butylbenzene	42.9		"	50.0		85.8	80-130				
n-Propylbenzene	43.2		"	50.0		86.4	74-136				
o-Xylene	46.4		"	50.0		92.7	83-123				
p- & m- Xylenes	91.4		"	100		91.4	82-128				
p-Isopropyltoluene	44.6		"	50.0		89.2	85-125				
sec-Butylbenzene	43.7		"	50.0		87.3	83-125				
Styrene	44.7		"	50.0		89.3	86-126				
tert-Butyl alcohol (TBA)	201		"	250		80.5	70-130				
tert-Butylbenzene	44.4		"	50.0		88.7	80-127				
Tetrachloroethylene	39.7		"	50.0		79.4	80-129	Low Bias			
Toluene	43.1		"	50.0		86.2	85-121				
trans-1,2-Dichloroethylene	44.1		"	50.0		88.3	72-132				
trans-1,3-Dichloropropylene	41.3		"	50.0		82.6	78-132				
Trichloroethylene	43.3		"	50.0		86.5	84-123				
Trichlorofluoromethane	43.7		"	50.0		87.3	62-140				
Vinyl Chloride	38.3		"	50.0		76.6	52-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*52.6*		*"*	*50.0*		*105*	*77-125*				
Surrogate: SURR: Toluene-d8	*48.8*		*"*	*50.0*		*97.7*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*48.9*		*"*	*50.0*		*97.8*	*76-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21134 - EPA 5035A											
LCS Dup (BH21134-BSD1)							Prepared & Analyzed: 08/18/2022				
1,1,1,2-Tetrachloroethane	54.8		ug/L	50.0		110	75-129		13.2	30	
1,1,1-Trichloroethane	51.4		"	50.0		103	71-137		10.0	30	
1,1,2,2-Tetrachloroethane	49.9		"	50.0		99.8	79-129		11.3	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	47.0		"	50.0		94.0	58-146		9.99	30	
1,1,2-Trichloroethane	50.1		"	50.0		100	83-123		9.96	30	
1,1-Dichloroethane	48.6		"	50.0		97.2	75-130		8.27	30	
1,1-Dichloroethylene	48.1		"	50.0		96.1	64-137		7.22	30	
1,2,3-Trichlorobenzene	48.9		"	50.0		97.9	81-140		11.6	30	
1,2,3-Trichloropropane	52.1		"	50.0		104	81-126		9.39	30	
1,2,4-Trichlorobenzene	49.4		"	50.0		98.9	80-141		9.71	30	
1,2,4-Trimethylbenzene	50.8		"	50.0		102	84-125		13.1	30	
1,2-Dibromo-3-chloropropane	46.6		"	50.0		93.2	74-142		13.0	30	
1,2-Dibromoethane	52.6		"	50.0		105	86-123		11.7	30	
1,2-Dichlorobenzene	48.5		"	50.0		97.0	85-122		11.3	30	
1,2-Dichloroethane	52.1		"	50.0		104	71-133		7.22	30	
1,2-Dichloropropane	50.2		"	50.0		100	81-122		12.6	30	
1,3,5-Trimethylbenzene	49.9		"	50.0		99.8	82-126		14.6	30	
1,3-Dichlorobenzene	49.5		"	50.0		98.9	84-124		12.7	30	
1,4-Dichlorobenzene	49.9		"	50.0		99.7	84-124		14.4	30	
1,4-Dioxane	1080		"	1050		103	10-228		17.3	30	
2-Butanone	48.1		"	50.0		96.2	58-147		9.01	30	
2-Hexanone	50.6		"	50.0		101	70-139		12.0	30	
4-Methyl-2-pentanone	51.2		"	50.0		102	72-132		12.2	30	
Acetone	61.0		"	50.0		122	36-155		11.0	30	
Acrolein	48.5		"	50.0		97.1	10-238		5.46	30	
Acrylonitrile	50.8		"	50.0		102	66-141		8.48	30	
Benzene	48.9		"	50.0		97.8	77-127		9.76	30	
Bromochloromethane	50.9		"	50.0		102	74-129		6.60	30	
Bromodichloromethane	52.0		"	50.0		104	81-124		11.0	30	
Bromoform	50.1		"	50.0		100	80-136		9.97	30	
Bromomethane	42.6		"	50.0		85.2	32-177		10.1	30	
Carbon disulfide	46.6		"	50.0		93.1	10-136		11.3	30	
Carbon tetrachloride	54.7		"	50.0		109	66-143		10.5	30	
Chlorobenzene	51.9		"	50.0		104	86-120		12.0	30	
Chloroethane	48.9		"	50.0		97.8	51-142		12.2	30	
Chloroform	52.0		"	50.0		104	76-131		9.45	30	
Chloromethane	38.6		"	50.0		77.3	49-132		7.35	30	
cis-1,2-Dichloroethylene	49.4		"	50.0		98.9	74-132		9.32	30	
cis-1,3-Dichloropropylene	52.7		"	50.0		105	81-129		12.9	30	
Cyclohexane	42.8		"	50.0		85.6	70-130		9.83	30	
Dibromochloromethane	54.5		"	50.0		109	10-200		11.0	30	
Dibromomethane	51.9		"	50.0		104	83-124		14.8	30	
Dichlorodifluoromethane	30.1		"	50.0		60.2	28-158		6.27	30	
Ethyl Benzene	51.4		"	50.0		103	84-125		13.9	30	
Hexachlorobutadiene	52.4		"	50.0		105	83-133		16.0	30	
Isopropylbenzene	51.7		"	50.0		103	81-127		15.0	30	
Methyl acetate	42.8		"	50.0		85.6	41-143		11.9	30	
Methyl tert-butyl ether (MTBE)	41.3		"	50.0		82.5	74-131		9.76	30	
Methylcyclohexane	45.6		"	50.0		91.2	70-130		15.7	30	
Methylene chloride	47.7		"	50.0		95.4	57-141		8.92	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21134 - EPA 5035A											
LCS Dup (BH21134-BSD1)								Prepared & Analyzed: 08/18/2022			
n-Butylbenzene	49.0		ug/L	50.0		98.1	80-130		13.4	30	
n-Propylbenzene	50.2		"	50.0		100	74-136		15.1	30	
o-Xylene	52.7		"	50.0		105	83-123		12.8	30	
p- & m- Xylenes	104		"	100		104	82-128		12.6	30	
p-Isopropyltoluene	50.9		"	50.0		102	85-125		13.2	30	
sec-Butylbenzene	50.3		"	50.0		101	83-125		14.1	30	
Styrene	50.5		"	50.0		101	86-126		12.2	30	
tert-Butyl alcohol (TBA)	230		"	250		92.2	70-130		13.5	30	
tert-Butylbenzene	51.8		"	50.0		104	80-127		15.4	30	
Tetrachloroethylene	45.0		"	50.0		90.0	80-129		12.5	30	
Toluene	48.6		"	50.0		97.1	85-121		11.9	30	
trans-1,2-Dichloroethylene	49.0		"	50.0		98.0	72-132		10.4	30	
trans-1,3-Dichloropropylene	45.9		"	50.0		91.7	78-132		10.4	30	
Trichloroethylene	49.8		"	50.0		99.7	84-123		14.1	30	
Trichlorofluoromethane	48.8		"	50.0		97.6	62-140		11.1	30	
Vinyl Chloride	43.5		"	50.0		86.9	52-130		12.6	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*51.7*		*"*	*50.0*		*103*	*77-125*				
Surrogate: SURR: Toluene-d8	*48.9*		*"*	*50.0*		*97.8*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.1*		*"*	*50.0*		*100*	*76-130*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21078 - EPA 3546 SVOA											
Blank (BH21078-BLK1)											
1,1-Biphenyl	ND	0.0416	mg/kg wet								
1,2,4,5-Tetrachlorobenzene	ND	0.0830	"								
1,2,4-Trichlorobenzene	ND	0.0416	"								
1,2-Dichlorobenzene	ND	0.0416	"								
1,2-Diphenylhydrazine (as Azobenzene)	ND	0.0416	"								
1,3-Dichlorobenzene	ND	0.0416	"								
1,4-Dichlorobenzene	ND	0.0416	"								
2,3,4,6-Tetrachlorophenol	ND	0.0830	"								
2,4,5-Trichlorophenol	ND	0.0416	"								
2,4,6-Trichlorophenol	ND	0.0416	"								
2,4-Dichlorophenol	ND	0.0416	"								
2,4-Dimethylphenol	ND	0.0416	"								
2,4-Dinitrophenol	ND	0.0830	"								
2,4-Dinitrotoluene	ND	0.0416	"								
2,6-Dinitrotoluene	ND	0.0416	"								
2-Chloronaphthalene	ND	0.0416	"								
2-Chlorophenol	ND	0.0416	"								
2-Methylnaphthalene	ND	0.0416	"								
2-Methylphenol	ND	0.0416	"								
2-Nitroaniline	ND	0.0830	"								
2-Nitrophenol	ND	0.0416	"								
3- & 4-Methylphenols	ND	0.0416	"								
3,3-Dichlorobenzidine	ND	0.0416	"								
3-Nitroaniline	ND	0.0830	"								
4,6-Dinitro-2-methylphenol	ND	0.0830	"								
4-Bromophenyl phenyl ether	ND	0.0416	"								
4-Chloro-3-methylphenol	ND	0.0416	"								
4-Chloroaniline	ND	0.0416	"								
4-Chlorophenyl phenyl ether	ND	0.0416	"								
4-Nitroaniline	ND	0.0830	"								
4-Nitrophenol	ND	0.0830	"								
Acenaphthene	ND	0.0416	"								
Acenaphthylene	ND	0.0416	"								
Acetophenone	ND	0.0416	"								
Aniline	ND	0.166	"								
Anthracene	ND	0.0416	"								
Atrazine	ND	0.0416	"								
Benzaldehyde	ND	0.0416	"								
Benzidine	ND	0.166	"								
Benzo(a)anthracene	ND	0.0416	"								
Benzo(a)pyrene	ND	0.0416	"								
Benzo(b)fluoranthene	ND	0.0416	"								
Benzo(g,h,i)perylene	ND	0.0416	"								
Benzo(k)fluoranthene	ND	0.0416	"								
Benzoic acid	ND	0.0416	"								
Benzyl alcohol	ND	0.0416	"								
Benzyl butyl phthalate	ND	0.0416	"								
Bis(2-chloroethoxy)methane	ND	0.0416	"								
Bis(2-chloroethyl)ether	ND	0.0416	"								
Bis(2-chloroisopropyl)ether	ND	0.0416	"								
Bis(2-ethylhexyl)phthalate	ND	0.0416	"								

Prepared: 08/17/2022 Analyzed: 08/18/2022

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21078 - EPA 3546 SVOA											
Blank (BH21078-BLK1)											
Prepared: 08/17/2022 Analyzed: 08/18/2022											
Caprolactam	ND	0.0830	mg/kg wet								
Carbazole	ND	0.0416	"								
Chrysene	ND	0.0416	"								
Dibenzo(a,h)anthracene	ND	0.0416	"								
Dibenzofuran	ND	0.0416	"								
Diethyl phthalate	ND	0.0416	"								
Dimethyl phthalate	ND	0.0416	"								
Di-n-butyl phthalate	ND	0.0416	"								
Di-n-octyl phthalate	ND	0.0416	"								
Fluoranthene	ND	0.0416	"								
Fluorene	ND	0.0416	"								
Hexachlorobenzene	ND	0.0416	"								
Hexachlorobutadiene	ND	0.0416	"								
Hexachlorocyclopentadiene	ND	0.0416	"								
Hexachloroethane	ND	0.0416	"								
Indeno(1,2,3-cd)pyrene	ND	0.0416	"								
Isophorone	ND	0.0416	"								
Naphthalene	ND	0.0416	"								
Nitrobenzene	ND	0.0416	"								
N-Nitrosodimethylamine	ND	0.0416	"								
N-nitroso-di-n-propylamine	ND	0.0416	"								
N-Nitrosodiphenylamine	ND	0.0416	"								
Pentachlorophenol	ND	0.0416	"								
Phenanthrene	ND	0.0416	"								
Phenol	ND	0.0416	"								
Pyrene	ND	0.0416	"								
Surrogate: SURR: 2-Fluorophenol	*0.530*		"	*1.66*		*31.9*	*20-108*				
Surrogate: SURR: Phenol-d5	*0.484*		"	*1.66*		*29.1*	*23-114*				
Surrogate: SURR: Nitrobenzene-d5	*0.279*		"	*0.831*		*33.6*	*22-108*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.280*		"	*0.831*		*33.7*	*21-113*				
Surrogate: SURR: 2,4,6-Tribromophenol	*0.929*		"	*1.66*		*55.9*	*19-110*				
Surrogate: SURR: Terphenyl-d14	*0.380*		"	*0.831*		*45.7*	*24-116*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21078 - EPA 3546 SVOA											
LCS (BH21078-BS1)								Prepared: 08/17/2022 Analyzed: 08/18/2022			
1,1-Biphenyl	0.405	0.0416	mg/kg wet	0.831		48.7	18-111				
1,2,4,5-Tetrachlorobenzene	0.456	0.0830	"	0.831		55.0	21-131				
1,2,4-Trichlorobenzene	0.427	0.0416	"	0.831		51.4	10-140				
1,2-Dichlorobenzene	0.375	0.0416	"	0.831		45.1	34-108				
1,2-Diphenylhydrazine (as Azobenzene)	0.362	0.0416	"	0.831		43.6	17-137				
1,3-Dichlorobenzene	0.369	0.0416	"	0.831		44.4	33-110				
1,4-Dichlorobenzene	0.389	0.0416	"	0.831		46.9	32-104				
2,3,4,6-Tetrachlorophenol	0.500	0.0830	"	0.831		60.2	30-130				
2,4,5-Trichlorophenol	0.461	0.0416	"	0.831		55.6	27-118				
2,4,6-Trichlorophenol	0.417	0.0416	"	0.831		50.2	31-120				
2,4-Dichlorophenol	0.434	0.0416	"	0.831		52.2	20-127				
2,4-Dimethylphenol	0.403	0.0416	"	0.831		48.6	14-132				
2,4-Dinitrophenol	0.489	0.0830	"	0.831		58.8	10-171				
2,4-Dinitrotoluene	0.511	0.0416	"	0.831		61.5	34-131				
2,6-Dinitrotoluene	0.498	0.0416	"	0.831		60.0	31-128				
2-Chloronaphthalene	0.390	0.0416	"	0.831		47.0	31-117				
2-Chlorophenol	0.382	0.0416	"	0.831		46.0	33-113				
2-Methylnaphthalene	0.394	0.0416	"	0.831		47.4	12-138				
2-Methylphenol	0.351	0.0416	"	0.831		42.3	10-136				
2-Nitroaniline	0.474	0.0830	"	0.831		57.1	27-132				
2-Nitrophenol	0.502	0.0416	"	0.831		60.4	17-129				
3- & 4-Methylphenols	0.326	0.0416	"	0.831		39.3	29-103				
3,3-Dichlorobenzidine	0.363	0.0416	"	0.831		43.8	22-149				
3-Nitroaniline	0.403	0.0830	"	0.831		48.6	20-133				
4,6-Dinitro-2-methylphenol	0.668	0.0830	"	0.831		80.5	10-143				
4-Bromophenyl phenyl ether	0.486	0.0416	"	0.831		58.5	29-120				
4-Chloro-3-methylphenol	0.399	0.0416	"	0.831		48.0	24-129				
4-Chloroaniline	0.336	0.0416	"	0.831		40.4	10-132				
4-Chlorophenyl phenyl ether	0.413	0.0416	"	0.831		49.8	27-124				
4-Nitroaniline	0.470	0.0830	"	0.831		56.6	16-128				
4-Nitrophenol	0.362	0.0830	"	0.831		43.6	10-141				
Acenaphthene	0.407	0.0416	"	0.831		49.0	30-121				
Acenaphthylene	0.366	0.0416	"	0.831		44.0	30-115				
Acetophenone	0.363	0.0416	"	0.831		43.7	20-112				
Aniline	0.312	0.166	"	0.831		37.6	10-119				
Anthracene	0.438	0.0416	"	0.831		52.7	34-118				
Atrazine	0.522	0.0416	"	0.831		62.9	26-112				
Benzaldehyde	0.376	0.0416	"	0.831		45.2	21-100				
Benzo(a)anthracene	0.441	0.0416	"	0.831		53.1	32-122				
Benzo(a)pyrene	0.431	0.0416	"	0.831		51.8	29-133				
Benzo(b)fluoranthene	0.458	0.0416	"	0.831		55.2	25-133				
Benzo(g,h,i)perylene	0.453	0.0416	"	0.831		54.5	10-143				
Benzo(k)fluoranthene	0.451	0.0416	"	0.831		54.4	25-128				
Benzoic acid	0.351	0.0416	"	0.831		42.2	10-140				
Benzyl alcohol	0.355	0.0416	"	0.831		42.8	30-115				
Benzyl butyl phthalate	0.390	0.0416	"	0.831		47.0	26-126				
Bis(2-chloroethoxy)methane	0.344	0.0416	"	0.831		41.4	19-132				
Bis(2-chloroethyl)ether	0.335	0.0416	"	0.831		40.4	19-125				
Bis(2-chloroisopropyl)ether	0.237	0.0416	"	0.831		28.5	20-135				
Bis(2-ethylhexyl)phthalate	0.386	0.0416	"	0.831		46.5	10-155				
Caprolactam	0.505	0.0830	"	0.831		60.8	10-127				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21078 - EPA 3546 SVOA											
LCS (BH21078-BS1)								Prepared: 08/17/2022 Analyzed: 08/18/2022			
Carbazole	0.448	0.0416	mg/kg wet	0.831		53.9	35-123				
Chrysene	0.448	0.0416	"	0.831		54.0	32-123				
Dibenzo(a,h)anthracene	0.467	0.0416	"	0.831		56.2	10-136				
Dibenzofuran	0.409	0.0416	"	0.831		49.2	29-121				
Diethyl phthalate	0.401	0.0416	"	0.831		48.3	34-116				
Dimethyl phthalate	0.405	0.0416	"	0.831		48.8	35-124				
Di-n-butyl phthalate	0.400	0.0416	"	0.831		48.1	31-116				
Di-n-octyl phthalate	0.386	0.0416	"	0.831		46.5	26-136				
Fluoranthene	0.428	0.0416	"	0.831		51.5	33-122				
Fluorene	0.400	0.0416	"	0.831		48.1	29-123				
Hexachlorobenzene	0.384	0.0416	"	0.831		46.2	21-124				
Hexachlorobutadiene	0.456	0.0416	"	0.831		55.0	10-149				
Hexachlorocyclopentadiene	0.219	0.0416	"	0.831		26.3	10-129				
Hexachloroethane	0.363	0.0416	"	0.831		43.8	28-108				
Indeno(1,2,3-cd)pyrene	0.300	0.0416	"	0.831		36.1	10-135				
Isophorone	0.339	0.0416	"	0.831		40.8	20-132				
Naphthalene	0.382	0.0416	"	0.831		46.0	23-124				
Nitrobenzene	0.364	0.0416	"	0.831		43.8	13-132				
N-Nitrosodimethylamine	0.241	0.0416	"	0.831		29.0	11-129				
N-nitroso-di-n-propylamine	0.290	0.0416	"	0.831		35.0	24-119				
N-Nitrosodiphenylamine	0.507	0.0416	"	0.831		61.0	22-152				
Pentachlorophenol	0.535	0.0416	"	0.831		64.4	10-139				
Phenanthrene	0.416	0.0416	"	0.831		50.0	33-123				
Phenol	0.373	0.0416	"	0.831		44.9	23-115				
Pyrene	0.418	0.0416	"	0.831		50.3	24-130				
Surrogate: SURR: 2-Fluorophenol	*0.501*		*"*	*1.66*		*30.2*	*20-108*				
Surrogate: SURR: Phenol-d5	*0.453*		*"*	*1.66*		*27.3*	*23-114*				
Surrogate: SURR: Nitrobenzene-d5	*0.263*		*"*	*0.831*		*31.7*	*22-108*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.261*		*"*	*0.831*		*31.4*	*21-113*				
Surrogate: SURR: 2,4,6-Tribromophenol	*0.828*		*"*	*1.66*		*49.9*	*19-110*				
Surrogate: SURR: Terphenyl-d14	*0.320*		*"*	*0.831*		*38.6*	*24-116*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21078 - EPA 3546 SVOA											
Matrix Spike (BH21078-MS1)	*Source sample: 22H0741-13 (Matrix Spike)							Prepared: 08/17/2022 Analyzed: 08/18/2022			
1,1-Biphenyl	0.309	0.0886	mg/kg dry	0.885	ND	35.0	10-130				
1,2,4,5-Tetrachlorobenzene	0.345	0.177	"	0.885	ND	39.0	10-133				
1,2,4-Trichlorobenzene	0.345	0.0886	"	0.885	ND	39.0	10-127				
1,2-Dichlorobenzene	0.290	0.0886	"	0.885	ND	32.8	14-111				
1,2-Diphenylhydrazine (as Azobenzene)	0.348	0.0886	"	0.885	ND	39.4	10-144				
1,3-Dichlorobenzene	0.285	0.0886	"	0.885	ND	32.2	11-111				
1,4-Dichlorobenzene	0.307	0.0886	"	0.885	ND	34.7	10-106				
2,3,4,6-Tetrachlorophenol	0.398	0.177	"	0.885	ND	45.0	30-130				
2,4,5-Trichlorophenol	0.326	0.0886	"	0.885	ND	36.9	10-127				
2,4,6-Trichlorophenol	0.317	0.0886	"	0.885	ND	35.8	10-132				
2,4-Dichlorophenol	0.351	0.0886	"	0.885	ND	39.7	10-128				
2,4-Dimethylphenol	0.313	0.0886	"	0.885	ND	35.4	10-137				
2,4-Dinitrophenol	ND	0.177	"	0.885	ND		10-171	Low Bias			
2,4-Dinitrotoluene	0.324	0.0886	"	0.885	ND	36.6	16-135				
2,6-Dinitrotoluene	0.331	0.0886	"	0.885	ND	37.4	18-131				
2-Chloronaphthalene	0.309	0.0886	"	0.885	ND	35.0	10-129				
2-Chlorophenol	0.292	0.0886	"	0.885	ND	33.0	15-116				
2-Methylnaphthalene	0.348	0.0886	"	0.885	ND	39.4	10-147				
2-Methylphenol	0.297	0.0886	"	0.885	ND	33.5	10-136				
2-Nitroaniline	0.331	0.177	"	0.885	ND	37.4	10-137				
2-Nitrophenol	0.307	0.0886	"	0.885	ND	34.6	10-129				
3- & 4-Methylphenols	0.257	0.0886	"	0.885	ND	29.0	10-123				
3,3-Dichlorobenzidine	0.405	0.0886	"	0.885	ND	45.8	10-155				
3-Nitroaniline	0.338	0.177	"	0.885	ND	38.2	12-133				
4,6-Dinitro-2-methylphenol	ND	0.177	"	0.885	ND		10-155	Low Bias			
4-Bromophenyl phenyl ether	0.371	0.0886	"	0.885	ND	41.9	14-128				
4-Chloro-3-methylphenol	0.393	0.0886	"	0.885	ND	44.4	10-134				
4-Chloroaniline	0.296	0.0886	"	0.885	ND	33.4	10-145				
4-Chlorophenyl phenyl ether	0.321	0.0886	"	0.885	ND	36.3	14-130				
4-Nitroaniline	0.355	0.177	"	0.885	ND	40.2	10-147				
4-Nitrophenol	0.354	0.177	"	0.885	ND	40.0	10-137				
Acenaphthene	0.328	0.0886	"	0.885	ND	37.0	10-146				
Acenaphthylene	0.305	0.0886	"	0.885	ND	34.5	10-134				
Acetophenone	0.333	0.0886	"	0.885	ND	37.7	10-116				
Aniline	0.219	0.355	"	0.885	ND	24.8	10-123				
Anthracene	0.405	0.0886	"	0.885	ND	45.8	10-142				
Atrazine	0.425	0.0886	"	0.885	ND	48.1	19-115				
Benzaldehyde	0.333	0.0886	"	0.885	ND	37.7	10-125				
Benzo(a)anthracene	0.534	0.0886	"	0.885	0.111	47.8	10-158				
Benzo(a)pyrene	0.477	0.0886	"	0.885	0.107	41.8	10-180				
Benzo(b)fluoranthene	0.496	0.0886	"	0.885	0.0745	47.6	10-200				
Benzo(g,h,i)perylene	0.496	0.0886	"	0.885	0.0787	47.2	10-138				
Benzo(k)fluoranthene	0.474	0.0886	"	0.885	0.116	40.5	10-197				
Benzoic acid	0.241	0.0886	"	0.885	ND	27.3	10-166				
Benzyl alcohol	0.297	0.0886	"	0.885	ND	33.6	12-124				
Benzyl butyl phthalate	0.382	0.0886	"	0.885	ND	43.2	10-154				
Bis(2-chloroethoxy)methane	0.315	0.0886	"	0.885	ND	35.6	10-132				
Bis(2-chloroethyl)ether	0.278	0.0886	"	0.885	ND	31.4	10-119				
Bis(2-chloroisopropyl)ether	0.281	0.0886	"	0.885	ND	31.8	10-139				
Bis(2-ethylhexyl)phthalate	0.432	0.0886	"	0.885	ND	48.8	10-167				
Caprolactam	0.417	0.177	"	0.885	ND	47.1	10-132				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21078 - EPA 3546 SVOA											
Matrix Spike (BH21078-MS1)	*Source sample: 22H0741-13 (Matrix Spike)							Prepared: 08/17/2022 Analyzed: 08/18/2022			
Carbazole	0.393	0.0886	mg/kg dry	0.885	ND	44.4	10-167				
Chrysene	0.495	0.0886	"	0.885	0.122	42.1	10-156				
Dibenzo(a,h)anthracene	0.442	0.0886	"	0.885	ND	49.9	10-137				
Dibenzofuran	0.326	0.0886	"	0.885	ND	36.9	10-147				
Diethyl phthalate	0.340	0.0886	"	0.885	ND	38.5	20-120				
Dimethyl phthalate	0.336	0.0886	"	0.885	ND	38.0	18-131				
Di-n-butyl phthalate	0.368	0.0886	"	0.885	ND	41.6	10-137				
Di-n-octyl phthalate	0.401	0.0886	"	0.885	ND	45.4	10-180				
Fluoranthene	0.593	0.0886	"	0.885	0.236	40.3	10-160				
Fluorene	0.340	0.0886	"	0.885	ND	38.5	10-157				
Hexachlorobenzene	0.407	0.0886	"	0.885	ND	46.0	10-137				
Hexachlorobutadiene	0.345	0.0886	"	0.885	ND	39.0	10-132				
Hexachlorocyclopentadiene	ND	0.0886	"	0.885	ND		10-106	Low Bias			
Hexachloroethane	0.239	0.0886	"	0.885	ND	27.0	10-110				
Indeno(1,2,3-cd)pyrene	0.476	0.0886	"	0.885	0.0648	46.4	10-144				
Isophorone	0.339	0.0886	"	0.885	ND	38.3	10-132				
Naphthalene	0.326	0.0886	"	0.885	ND	36.9	10-141				
Nitrobenzene	0.338	0.0886	"	0.885	ND	38.2	10-131				
N-Nitrosodimethylamine	0.264	0.0886	"	0.885	ND	29.8	10-126				
N-nitroso-di-n-propylamine	0.299	0.0886	"	0.885	ND	33.8	10-125				
N-Nitrosodiphenylamine	0.433	0.0886	"	0.885	ND	48.9	10-177				
Pentachlorophenol	0.248	0.0886	"	0.885	ND	28.1	10-153				
Phenanthrene	0.505	0.0886	"	0.885	0.139	41.4	10-148				
Phenol	0.289	0.0886	"	0.885	ND	32.6	10-126				
Pyrene	0.542	0.0886	"	0.885	0.212	37.3	10-165				
Surrogate: SURR: 2-Fluorophenol	*0.639*		"	*1.77*		*36.1*	*20-108*				
Surrogate: SURR: Phenol-d5	*0.634*		"	*1.77*		*35.8*	*23-114*				
Surrogate: SURR: Nitrobenzene-d5	*0.399*		"	*0.885*		*45.0*	*22-108*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.340*		"	*0.885*		*38.4*	*21-113*				
Surrogate: SURR: 2,4,6-Tribromophenol	*0.881*		"	*1.77*		*49.8*	*19-110*				
Surrogate: SURR: Terphenyl-d14	*0.455*		"	*0.885*		*51.4*	*24-116*				

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21078 - EPA 3546 SVOA											
Matrix Spike Dup (BH21078-MSD1)	*Source sample: 22H0741-13 (Matrix Spike Dup)								Prepared: 08/17/2022 Analyzed: 08/18/2022		
1,1-Biphenyl	0.469	0.0886	mg/kg dry	0.885	ND	53.0	10-130		40.9	30	Non-dir.
1,2,4,5-Tetrachlorobenzene	0.514	0.177	"	0.885	ND	58.1	10-133		39.2	30	Non-dir.
1,2,4-Trichlorobenzene	0.522	0.0886	"	0.885	ND	59.0	10-127		41.0	30	Non-dir.
1,2-Dichlorobenzene	0.450	0.0886	"	0.885	ND	50.8	14-111		43.1	30	Non-dir.
1,2-Diphenylhydrazine (as Azobenzene)	0.537	0.0886	"	0.885	ND	60.7	10-144		42.7	30	Non-dir.
1,3-Dichlorobenzene	0.440	0.0886	"	0.885	ND	49.7	11-111		42.6	30	Non-dir.
1,4-Dichlorobenzene	0.456	0.0886	"	0.885	ND	51.5	10-106		39.0	30	Non-dir.
2,3,4,6-Tetrachlorophenol	0.599	0.177	"	0.885	ND	67.7	30-130		40.3	30	Non-dir.
2,4,5-Trichlorophenol	0.495	0.0886	"	0.885	ND	55.9	10-127		41.0	30	Non-dir.
2,4,6-Trichlorophenol	0.471	0.0886	"	0.885	ND	53.3	10-132		39.1	30	Non-dir.
2,4-Dichlorophenol	0.510	0.0886	"	0.885	ND	57.6	10-128		36.8	30	Non-dir.
2,4-Dimethylphenol	0.483	0.0886	"	0.885	ND	54.6	10-137		42.7	30	Non-dir.
2,4-Dinitrophenol	ND	0.177	"	0.885	ND		10-171	Low Bias		30	
2,4-Dinitrotoluene	0.525	0.0886	"	0.885	ND	59.4	16-135		47.3	30	Non-dir.
2,6-Dinitrotoluene	0.505	0.0886	"	0.885	ND	57.0	18-131		41.7	30	Non-dir.
2-Chloronaphthalene	0.450	0.0886	"	0.885	ND	50.9	10-129		37.1	30	Non-dir.
2-Chlorophenol	0.440	0.0886	"	0.885	ND	49.8	15-116		40.4	30	Non-dir.
2-Methylnaphthalene	0.517	0.0886	"	0.885	ND	58.4	10-147		39.0	30	Non-dir.
2-Methylphenol	0.437	0.0886	"	0.885	ND	49.4	10-136		38.2	30	Non-dir.
2-Nitroaniline	0.520	0.177	"	0.885	ND	58.7	10-137		44.5	30	Non-dir.
2-Nitrophenol	0.439	0.0886	"	0.885	ND	49.6	10-129		35.5	30	Non-dir.
3- & 4-Methylphenols	0.412	0.0886	"	0.885	ND	46.6	10-123		46.3	30	Non-dir.
3,3-Dichlorobenzidine	0.675	0.0886	"	0.885	ND	76.2	10-155		50.0	30	Non-dir.
3-Nitroaniline	0.528	0.177	"	0.885	ND	59.7	12-133		44.0	30	Non-dir.
4,6-Dinitro-2-methylphenol	ND	0.177	"	0.885	ND		10-155	Low Bias		30	
4-Bromophenyl phenyl ether	0.554	0.0886	"	0.885	ND	62.6	14-128		39.5	30	Non-dir.
4-Chloro-3-methylphenol	0.583	0.0886	"	0.885	ND	65.9	10-134		39.0	30	Non-dir.
4-Chloroaniline	0.452	0.0886	"	0.885	ND	51.1	10-145		41.8	30	Non-dir.
4-Chlorophenyl phenyl ether	0.485	0.0886	"	0.885	ND	54.8	14-130		40.6	30	Non-dir.
4-Nitroaniline	0.530	0.177	"	0.885	ND	59.8	10-147		39.4	30	Non-dir.
4-Nitrophenol	0.367	0.177	"	0.885	ND	41.4	10-137		3.54	30	
Acenaphthene	0.469	0.0886	"	0.885	ND	53.0	10-146		35.4	30	Non-dir.
Acenaphthylene	0.464	0.0886	"	0.885	ND	52.5	10-134		41.4	30	Non-dir.
Acetophenone	0.525	0.0886	"	0.885	ND	59.4	10-116		44.7	30	Non-dir.
Aniline	0.355	0.355	"	0.885	ND	40.1	10-123		47.1	30	Non-dir.
Anthracene	0.563	0.0886	"	0.885	ND	63.7	10-142		32.7	30	Non-dir.
Atrazine	0.634	0.0886	"	0.885	ND	71.7	19-115		39.4	30	Non-dir.
Benzaldehyde	0.491	0.0886	"	0.885	ND	55.4	10-125		38.1	30	Non-dir.
Benzo(a)anthracene	0.689	0.0886	"	0.885	0.111	65.2	10-158		25.2	30	
Benzo(a)pyrene	0.639	0.0886	"	0.885	0.107	60.0	10-180		28.9	30	
Benzo(b)fluoranthene	0.658	0.0886	"	0.885	0.0745	65.9	10-200		28.1	30	
Benzo(g,h,i)perylene	0.692	0.0886	"	0.885	0.0787	69.3	10-138		33.0	30	Non-dir.
Benzo(k)fluoranthene	0.616	0.0886	"	0.885	0.116	56.5	10-197		26.0	30	
Benzoic acid	0.317	0.0886	"	0.885	ND	35.8	10-166		27.1	30	
Benzyl alcohol	0.457	0.0886	"	0.885	ND	51.7	12-124		42.4	30	Non-dir.
Benzyl butyl phthalate	0.577	0.0886	"	0.885	ND	65.2	10-154		40.6	30	Non-dir.
Bis(2-chloroethoxy)methane	0.484	0.0886	"	0.885	ND	54.7	10-132		42.3	30	Non-dir.
Bis(2-chloroethyl)ether	0.442	0.0886	"	0.885	ND	50.0	10-119		45.6	30	Non-dir.
Bis(2-chloroisopropyl)ether	0.425	0.0886	"	0.885	ND	48.1	10-139		40.9	30	Non-dir.
Bis(2-ethylhexyl)phthalate	0.595	0.0886	"	0.885	ND	67.2	10-167		31.7	30	Non-dir.
Caprolactam	0.606	0.177	"	0.885	ND	68.5	10-132		37.0	30	Non-dir.

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21078 - EPA 3546 SVOA											
Matrix Spike Dup (BH21078-MSD1)	*Source sample: 22H0741-13 (Matrix Spike Dup)								Prepared: 08/17/2022 Analyzed: 08/18/2022		
Carbazole	0.562	0.0886	mg/kg dry	0.885	ND	63.5	10-167		35.4	30	Non-dir.
Chrysene	0.657	0.0886	"	0.885	0.122	60.5	10-156		28.1	30	
Dibenzo(a,h)anthracene	0.627	0.0886	"	0.885	ND	70.9	10-137		34.7	30	Non-dir.
Dibenzofuran	0.487	0.0886	"	0.885	ND	55.0	10-147		39.5	30	Non-dir.
Diethyl phthalate	0.519	0.0886	"	0.885	ND	58.6	20-120		41.5	30	Non-dir.
Dimethyl phthalate	0.496	0.0886	"	0.885	ND	56.0	18-131		38.3	30	Non-dir.
Di-n-butyl phthalate	0.543	0.0886	"	0.885	ND	61.4	10-137		38.4	30	Non-dir.
Di-n-octyl phthalate	0.585	0.0886	"	0.885	ND	66.2	10-180		37.3	30	Non-dir.
Fluoranthene	0.730	0.0886	"	0.885	0.236	55.8	10-160		20.8	30	
Fluorene	0.493	0.0886	"	0.885	ND	55.8	10-157		36.7	30	Non-dir.
Hexachlorobenzene	0.600	0.0886	"	0.885	ND	67.8	10-137		38.3	30	Non-dir.
Hexachlorobutadiene	0.512	0.0886	"	0.885	ND	57.8	10-132		39.0	30	Non-dir.
Hexachlorocyclopentadiene	ND	0.0886	"	0.885	ND		10-106	Low Bias		30	
Hexachloroethane	0.384	0.0886	"	0.885	ND	43.4	10-110		46.5	30	Non-dir.
Indeno(1,2,3-cd)pyrene	0.675	0.0886	"	0.885	0.0648	69.0	10-144		34.7	30	Non-dir.
Isophorone	0.517	0.0886	"	0.885	ND	58.5	10-132		41.7	30	Non-dir.
Naphthalene	0.505	0.0886	"	0.885	ND	57.0	10-141		42.9	30	Non-dir.
Nitrobenzene	0.514	0.0886	"	0.885	ND	58.1	10-131		41.2	30	Non-dir.
N-Nitrosodimethylamine	0.465	0.0886	"	0.885	ND	52.6	10-126		55.1	30	Non-dir.
N-nitroso-di-n-propylamine	0.449	0.0886	"	0.885	ND	50.7	10-125		40.2	30	Non-dir.
N-Nitrosodiphenylamine	0.650	0.0886	"	0.885	ND	73.4	10-177		40.2	30	Non-dir.
Pentachlorophenol	0.423	0.0886	"	0.885	ND	47.8	10-153		52.1	30	Non-dir.
Phenanthrene	0.630	0.0886	"	0.885	0.139	55.5	10-148		21.9	30	
Phenol	0.445	0.0886	"	0.885	ND	50.2	10-126		42.5	30	Non-dir.
Pyrene	0.683	0.0886	"	0.885	0.212	53.3	10-165		23.1	30	
Surrogate: SURR: 2-Fluorophenol	*0.667*		"	*1.77*		*37.7*	*20-108*				
Surrogate: SURR: Phenol-d5	*0.629*		"	*1.77*		*35.5*	*23-114*				
Surrogate: SURR: Nitrobenzene-d5	*0.384*		"	*0.885*		*43.4*	*22-108*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.311*		"	*0.885*		*35.1*	*21-113*				
Surrogate: SURR: 2,4,6-Tribromophenol	*0.840*		"	*1.77*		*47.5*	*19-110*				
Surrogate: SURR: Terphenyl-d14	*0.416*		"	*0.885*		*47.0*	*24-116*				

Organochlorine Pesticides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21081 - EPA 3550C											
Blank (BH21081-BLK1)											Prepared: 08/17/2022 Analyzed: 08/18/2022
4,4'-DDD	ND	1.64	ug/kg wet								
4,4'-DDE	ND	1.64	"								
4,4'-DDT	ND	1.64	"								
Aldrin	ND	1.64	"								
alpha-BHC	ND	1.64	"								
alpha-Chlordane	ND	1.64	"								
beta-BHC	ND	1.64	"								
delta-BHC	ND	1.64	"								
Dieldrin	ND	1.64	"								
Endosulfan I	ND	1.64	"								
Endosulfan II	ND	1.64	"								
Endosulfan sulfate	ND	1.64	"								
Endrin	ND	1.64	"								
Endrin aldehyde	ND	1.64	"								
Endrin ketone	ND	1.64	"								
gamma-BHC (Lindane)	ND	1.64	"								
gamma-Chlordane	ND	1.64	"								
Heptachlor	ND	1.64	"								
Heptachlor epoxide	ND	1.64	"								
Methoxychlor	ND	1.64	"								
Toxaphene	ND	164	"								
Surrogate: Decachlorobiphenyl	*44.4*		*"*	*66.4*		*66.8*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*42.3*		*"*	*66.4*		*63.6*	*30-150*				
LCS (BH21081-BS1)											Prepared: 08/17/2022 Analyzed: 08/18/2022
4,4'-DDD	25.3	1.64	ug/kg wet	33.2		76.2	40-140				
4,4'-DDE	22.7	1.64	"	33.2		68.3	40-140				
4,4'-DDT	15.8	1.64	"	33.2		47.5	40-140				
Aldrin	22.8	1.64	"	33.2		68.5	40-140				
alpha-BHC	23.8	1.64	"	33.2		71.5	40-140				
alpha-Chlordane	27.1	1.64	"	33.2		81.4	40-140				
beta-BHC	27.2	1.64	"	33.2		82.0	40-140				
delta-BHC	19.6	1.64	"	33.2		59.1	40-140				
Dieldrin	27.2	1.64	"	33.2		81.8	40-140				
Endosulfan I	28.8	1.64	"	33.2		86.8	40-140				
Endosulfan II	26.3	1.64	"	33.2		79.3	40-140				
Endosulfan sulfate	23.7	1.64	"	33.2		71.2	40-140				
Endrin	21.3	1.64	"	33.2		64.3	40-140				
Endrin aldehyde	24.3	1.64	"	33.2		73.3	40-140				
Endrin ketone	26.1	1.64	"	33.2		78.6	40-140				
gamma-BHC (Lindane)	23.9	1.64	"	33.2		71.8	40-140				
gamma-Chlordane	26.1	1.64	"	33.2		78.6	40-140				
Heptachlor	23.7	1.64	"	33.2		71.4	40-140				
Heptachlor epoxide	27.2	1.64	"	33.2		81.8	40-140				
Methoxychlor	15.1	1.64	"	33.2		45.4	40-140				
Surrogate: Decachlorobiphenyl	*41.5*		*"*	*66.4*		*62.4*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*39.1*		*"*	*66.4*		*58.8*	*30-150*				

Organochlorine Pesticides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch Y2G2405 - BG21090											
Performance Mix (Y2G2405-PEM1)							Prepared & Analyzed: 07/24/2022				
4,4'-DDD	9.28		ng/mL	0.00			0-200				
4,4'-DDE	1.23		"	0.00			0-200				
4,4'-DDT	221		"	200		110	0-200				
Endrin	106		"	100		106	0-200				
Endrin aldehyde	1.58		"	0.00			0-200				
Endrin ketone	5.70		"	0.00			0-200				
Batch Y2G2747 - BG21247											
Performance Mix (Y2G2747-PEM1)							Prepared & Analyzed: 07/27/2022				
4,4'-DDD	11.6		ng/mL	0.00			0-200				
4,4'-DDE	1.44		"	0.00			0-200				
4,4'-DDT	208		"	200		104	0-200				
Endrin	114		"	100		114	0-200				
Endrin aldehyde	1.91		"	0.00			0-200				
Endrin ketone	6.22		"	0.00			0-200				
Batch Y2H1925 - BH20915											
Performance Mix (Y2H1925-PEM1)							Prepared & Analyzed: 08/18/2022				
4,4'-DDD	15.8		ng/mL	0.00			0-200				
4,4'-DDE	1.16		"	0.00			0-200				
4,4'-DDT	210		"	200		105	0-200				
Endrin	107		"	100		107	0-200				
Endrin aldehyde	1.98		"	0.00			0-200				
Endrin ketone	8.89		"	0.00			0-200				

Organochlorine Pesticides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch Y2H1958 - BG21169											
Performance Mix (Y2H1958-PEM1)							Prepared & Analyzed: 08/19/2022				
4,4'-DDD	15.4		ng/mL	0.00			0-200				
4,4'-DDE	1.18		"	0.00			0-200				
4,4'-DDT	204		"	200		102	0-200				
Endrin	117		"	100		117	0-200				
Endrin aldehyde	2.49		"	0.00			0-200				
Endrin ketone	9.38		"	0.00			0-200				

Polychlorinated Biphenyls by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21081 - EPA 3550C											
Blank (BH21081-BLK2)											Prepared: 08/17/2022 Analyzed: 08/18/2022
Aroclor 1016	ND	0.0166	mg/kg wet								
Aroclor 1221	ND	0.0166	"								
Aroclor 1232	ND	0.0166	"								
Aroclor 1242	ND	0.0166	"								
Aroclor 1248	ND	0.0166	"								
Aroclor 1254	ND	0.0166	"								
Aroclor 1260	ND	0.0166	"								
Total PCBs	ND	0.0166	"								
Surrogate: Tetrachloro-m-xylene	*0.0419*		*"*	*0.0664*		*63.0*	*30-120*				
Surrogate: Decachlorobiphenyl	*0.0528*		*"*	*0.0664*		*79.5*	*30-120*				
LCS (BH21081-BS2)											Prepared: 08/17/2022 Analyzed: 08/18/2022
Aroclor 1016	0.259	0.0166	mg/kg wet	0.332		78.0	40-130				
Aroclor 1260	0.295	0.0166	"	0.332		88.8	40-130				
Surrogate: Tetrachloro-m-xylene	*0.0429*		*"*	*0.0664*		*64.5*	*30-120*				
Surrogate: Decachlorobiphenyl	*0.0485*		*"*	*0.0664*		*73.0*	*30-120*				
Batch Y2H1917 - BH20962											
Aroclor Reference (Y2H1917-ARC1)											Prepared & Analyzed: 08/18/2022
Surrogate: Tetrachloro-m-xylene	*0.210*		*ug/mL*	*0.200*		*105*					
Surrogate: Decachlorobiphenyl	*0.232*		*"*	*0.200*		*116*					

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH20963 - EPA 3050B											
Blank (BH20963-BLK1)											
Prepared: 08/16/2022 Analyzed: 08/18/2022											
Aluminum	ND	6.00	mg/kg wet								
Antimony	ND	3.00	"								
Arsenic	ND	1.80	"								
Barium	ND	3.00	"								
Beryllium	ND	0.060	"								
Cadmium	ND	0.360	"								
Calcium	8.65	6.00	"								
Chromium	ND	0.600	"								
Cobalt	ND	0.480	"								
Copper	ND	2.40	"								
Iron	ND	30.0	"								
Lead	ND	0.600	"								
Magnesium	ND	6.00	"								
Manganese	ND	0.600	"								
Nickel	ND	1.20	"								
Potassium	7.32	6.00	"								
Selenium	ND	3.00	"								
Silver	ND	0.600	"								
Sodium	ND	60.0	"								
Thallium	ND	3.00	"								
Vanadium	ND	1.20	"								
Zinc	ND	3.00	"								
Duplicate (BH20963-DUP1)	*Source sample: 22H0739-01 (Duplicate)										
Prepared: 08/16/2022 Analyzed: 08/18/2022											
Aluminum	9330	6.85	mg/kg dry		7440				22.6	35	
Antimony	ND	3.43	"		ND					35	
Arsenic	7.40	2.06	"		5.93				22.1	35	
Barium	158	3.43	"		114				32.1	35	
Beryllium	ND	0.069	"		ND					35	
Cadmium	1.00	0.411	"		0.838				17.9	35	
Calcium	30200	6.85	"		23800				23.8	35	
Chromium	28.4	0.685	"		24.2				15.7	35	
Cobalt	8.71	0.548	"		7.09				20.5	35	
Copper	88.8	2.74	"		68.5				25.8	35	
Iron	18800	34.3	"		16800				11.3	35	
Lead	292	0.685	"		151				63.5	35	Non-dir.
Magnesium	6140	6.85	"		3450				56.2	35	Non-dir.
Manganese	304	0.685	"		255				17.5	35	
Nickel	35.2	1.37	"		32.4				8.39	35	
Potassium	1200	6.85	"		835				35.6	35	Non-dir.
Selenium	ND	3.43	"		ND					35	
Silver	ND	0.685	"		ND					35	
Sodium	292	68.5	"		190				42.1	35	Non-dir.
Thallium	ND	3.43	"		ND					35	
Vanadium	34.0	1.37	"		24.5				32.4	35	
Zinc	255	3.43	"		199				24.7	35	

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH20963 - EPA 3050B											
Matrix Spike (BH20963-MS1)	*Source sample: 22H0739-01 (Matrix Spike)								Prepared: 08/16/2022 Analyzed: 08/18/2022		
Aluminum	9410	6.85	mg/kg dry	228	7440	863	75-125	High Bias			
Antimony	8.56	3.43	"	28.5	ND	30.0	75-125	Low Bias			
Arsenic	226	2.06	"	228	5.93	96.4	75-125				
Barium	368	3.43	"	228	114	111	75-125				
Beryllium	5.05	0.069	"	5.71	ND	88.4	75-125				
Cadmium	6.47	0.411	"	5.71	0.838	98.6	75-125				
Calcium	30400	6.85	"	114	23800	NR	75-125	High Bias			
Chromium	47.7	0.685	"	22.8	24.2	103	75-125				
Cobalt	67.2	0.548	"	57.1	7.09	105	75-125				
Copper	122	2.74	"	28.5	68.5	188	75-125	High Bias			
Iron	22600	34.3	"	114	16800	NR	75-125	High Bias			
Lead	273	0.685	"	57.1	151	213	75-125	High Bias			
Magnesium	4870	6.85	"	114	3450	NR	75-125	High Bias			
Manganese	397	0.685	"	57.1	255	248	75-125	High Bias			
Nickel	102	1.37	"	57.1	32.4	122	75-125				
Potassium	1290	6.85	"	114	835	401	75-125	High Bias			
Selenium	171	3.43	"	228	ND	74.9	75-125	Low Bias			
Silver	5.03	0.685	"	5.71	ND	88.1	75-125				
Sodium	653	68.5	"	114	190	405	75-125	High Bias			
Thallium	192	3.43	"	228	ND	84.2	75-125				
Vanadium	86.0	1.37	"	57.1	24.5	108	75-125				
Zinc	322	3.43	"	57.1	199	215	75-125	High Bias			
Post Spike (BH20963-PS1)	*Source sample: 22H0739-01 (Post Spike)								Prepared: 08/16/2022 Analyzed: 08/18/2022		
Aluminum	77.4		ug/mL	2.00	65.1	612	75-125	High Bias			
Antimony	0.269		"	0.250	0.014	102	75-125				
Arsenic	2.01		"	2.00	0.052	98.1	75-125				
Barium	3.27		"	2.00	1.00	113	75-125				
Beryllium	0.045		"	0.0500	-0.004	90.8	75-125				
Cadmium	0.055		"	0.0500	0.007	95.6	75-125				
Calcium	252		"	1.00	209	NR	75-125	High Bias			
Chromium	0.452		"	0.200	0.212	120	75-125				
Cobalt	0.596		"	0.500	0.062	107	75-125				
Copper	1.00		"	0.250	0.600	161	75-125	High Bias			
Iron	172		"	1.00	147	NR	75-125	High Bias			
Lead	2.18		"	0.500	1.32	172	75-125	High Bias			
Magnesium	37.7		"	1.00	30.2	746	75-125	High Bias			
Manganese	3.11		"	0.500	2.24	175	75-125	High Bias			
Nickel	0.895		"	0.500	0.284	122	75-125				
Potassium	13.2		"	1.00	7.31	590	75-125	High Bias			
Selenium	1.58		"	2.00	-0.098	78.9	75-125				
Silver	0.034		"	0.0500	-0.005	68.4	75-125	Low Bias			
Sodium	4.21		"	1.00	1.67	255	75-125	High Bias			
Thallium	1.76		"	2.00	-0.032	87.9	75-125				
Vanadium	0.764		"	0.500	0.214	110	75-125				
Zinc	2.53		"	0.500	1.74	158	75-125	High Bias			

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH20963 - EPA 3050B											
Reference (BH20963-SRM1)								Prepared: 08/16/2022 Analyzed: 08/18/2022			
Aluminum	9700	6.00	mg/kg wet	10100		96.1	39.5-118.8				
Antimony	79.7	3.00	"	244		32.7	10-123				
Arsenic	106	1.80	"	109		97.1	63.7-118.3				
Barium	385	3.00	"	364		106	70.3-117				
Beryllium	55.3	0.060	"	57.0		97.0	69.3-115.4				
Cadmium	46.8	0.360	"	48.7		96.1	67.8-112.9				
Calcium	5090	6.00	"	5190		98.1	66.3-116.6				
Chromium	172	0.600	"	173		99.3	65.3-120.8				
Cobalt	155	0.480	"	148		105	70.3-117.6				
Copper	198	2.40	"	179		111	70.9-117.9				
Iron	15200	30.0	"	15000		101	36.8-162.7				
Lead	109	0.600	"	101		108	69.1-126.7				
Magnesium	2680	6.00	"	2570		104	56.4-124.9				
Manganese	429	0.600	"	370		116	72.2-119.2				
Nickel	64.3	1.20	"	52.2		123	63.4-117.8	High Bias			
Potassium	1970	6.00	"	2420		81.4	49.6-118.6				
Selenium	72.9	3.00	"	104		70.1	58.5-122.1				
Silver	28.8	0.600	"	29.9		96.4	63.5-123.7				
Sodium	381	60.0	"	161		237	30.1-139.1	High Bias			
Thallium	88.7	3.00	"	101		87.8	59.8-120.8				
Vanadium	194	1.20	"	194		100	73.2-117				
Zinc	421	3.00	"	431		97.6	74.9-121.1				

Mercury by EPA 7000/200 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21519 - EPA 7473 soil											
Blank (BH21519-BLK1)								Prepared & Analyzed: 08/25/2022			
Mercury	ND	0.0300	mg/kg wet								
Duplicate (BH21519-DUP1)	*Source sample: 22H0962-01 (Duplicate)							Prepared & Analyzed: 08/25/2022			
Mercury	1.88	0.0338	mg/kg dry		2.64				33.8	35	
Matrix Spike (BH21519-MS1)	*Source sample: 22H0962-01 (Matrix Spike)							Prepared & Analyzed: 08/25/2022			
Mercury	3.65		mg/kg	0.500	2.35	260	75-125	High Bias			
Reference (BH21519-SRM1)								Prepared & Analyzed: 08/25/2022			
Mercury	31.922		mg/kg	27.2		117	59.9-140.1				

Miscellaneous Physical Parameters - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH21246 - % Solids Prep											
Duplicate (BH21246-DUP1)	*Source sample: 22H1035-05 (Duplicate)								Prepared & Analyzed: 08/19/2022		
% Solids	91.5	0.100	%		91.7				0.226	20	
Batch BH21321 - % Solids Prep											
Duplicate (BH21321-DUP1)	*Source sample: 22H0961-01 (S-1)								Prepared & Analyzed: 08/22/2022		
% Solids	90.2	0.100	%		90.4				0.185	20	
Duplicate (BH21321-DUP2)	*Source sample: 22H0961-06 (S-6)								Prepared & Analyzed: 08/22/2022		
% Solids	87.1	0.100	%		87.3				0.226	20	

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
22H0961-01	S-1	8 oz. WM Clear Glass Cool to 4° C
22H0961-02	S-2	8 oz. WM Clear Glass Cool to 4° C
22H0961-03	S-3	8 oz. WM Clear Glass Cool to 4° C
22H0961-04	S-4	8 oz. WM Clear Glass Cool to 4° C
22H0961-05	S-5	8 oz. WM Clear Glass Cool to 4° C
22H0961-06	S-6	8 oz. WM Clear Glass Cool to 4° C

Sample and Data Qualifiers Relating to This Work Order

VOA-CONT	Non-Compliant - the container(s) provided by the client for soil volatiles do not meet the requirements of EPA SW846-5035A. Results reported below 200 ug/kg may be biased low due to samples not being collected according to EPA SW846 5035A requirements.
S-03	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect. This effect was confirmed by reanalysis.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
M-SPKM	The spike recovery is not within acceptance windows due to sample non-homogeneity, or matrix interference.
M-ICV2	The recovery for this element in the ICV was outside the 90-110% recovery criteria.
M-DUPS	The RPD between the native sample and the duplicate is outside of limits due to sample non-homogeneity
M-BLK	The target analyte was detected above the RL in the batch method blank. All samples showed >10x the concentration in the blank for this analyte. Data are reported.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
CCVE	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).
B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

High Bias — High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

Non-Dir. — Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

Corrective Action: VOCs submitted in bulk containers.

HES office pkg

York Analytical Laboratories, Inc.
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clientservices@yorklab.com
www.yorklab.com

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 22H0961

Page 1 of 1

YOUR Information	Report To:	Invoice To:
Company: JMC, PLLC	Company: JMC, PLLC	Company: JMC, PLLC
Address: 120 BEDFORD RD ARMONK, NY 10504	Address: 120 BEDFORD RD ARMONK, NY 10504	Address: 120 BEDFORD RD ARMONK, NY 10504
Phone: 914-907-4692	Phone: 914-907-4692	Phone: 914-907-4692
Contact: RICK BOHLANDER	Contact: RICK BOHLANDER	Contact: RICK BOHLANDER
E-mail: rbohlander@jmcpllc.com	E-mail: rbohlander@jmcpllc.com	E-mail: rbohlander@jmcpllc.com

YOUR Project Number: 4 TRIPP LANE ARMONK, NY 10504

YOUR Project Name: SAME AS ABOVE

YOUR PO#: NONE

Turn-Around Time

RUSH - Next Day	
RUSH - Two Day	
RUSH - Three Day	
RUSH - Four Day	
Standard (5-7 Day)	X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below) RICK BOHLANDER

Matrix Codes: S - soil / solid; GW - groundwater; DW - drinking water; WW - wastewater; O - Oil ; Other

Samples From: New York X; New Jersey; Connecticut; Pennsylvania; Other

Report / EDD Type (circle selections): Summary Report; QA Report; NY ASP A Package; NY ASP B Package; CT RCP; CT RCP DQA/DUE; NJDEP Reduced Deliverables; NJDKQP; Standard Excel EDD; EQuIS (Standard); NYSDEC EQuIS; NJDEP SRP HazSite; Other:

YORK Reg. Comp.: Compared to the following Regulation(s): (please fill in)

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
S-1	S	8/4/22 3pm	EPA Method 8260 Full List	8 oz GLASS
S-2	S	8/4/22 3pm		
S-3	S	8/4/22 3pm		
S-4	S	8/4/22 3pm		
S-5	S	8/4/22 3pm		
S-6	S	8/4/22 3pm		
Comp-1, C-1	S	8/4/22 3pm	EPA 8270, TAL Metals, PESTICIDES, PCBs via EPA 8090	
Comp-2, C-2	S	8/4/22 3pm		
Comp-3, C-3	S	8/4/22 3pm		

Comments: 4 TRIPP LANE, ARMONK, NY 10504

Preservation: (check all that apply) HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___ Ascorbic Acid ___ Other: ___

Special Instruction: Field Filtered ___ Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
JMC, PLLC	8/10/22 3:45 pm	Chris York	8-16-22 13:40	Chris York	8-16-22 1500
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time
				K Blackman	8/16/22 1500

Temp. Received at Lab: 2.8 Degrees C

4 Tripp Lane
Armonk, New York

Summary Laboratory Analytical Results for Soil

Sample ID York ID Sampling Date Client Matrix	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential	S-1 22H0961-01 8/4/2022 Soil		S-2 22H0961-02 8/4/2022 Soil		S-3 22H0961-03 8/4/2022 Soil		S-4 22H0961-04 8/4/2022 Soil		S-5 22H0961-05 8/4/2022 Soil		S-6 22H0961-06 8/4/2022 Soil		Comp-1, C-1 22H0961-07 8/4/2022 Soil		Comp-2, C-2 22H0961-08 8/4/2022 Soil		Comp-3, C-3 22H0961-09 8/4/2022 Soil	
Compound			Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Volatile Organics, 8260 - Comprehensive (mg/kg)																				
1,1,1,2-Tetrachloroethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,1,1-Trichloroethane	0.68	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,1,2,2-Tetrachloroethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,1,2-Trichloroethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,1-Dichloroethane	0.27	26	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,1-Dichloroethylene	0.33	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,2,3-Trichlorobenzene	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,2,3-Trichloropropane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,2,4-Trichlorobenzene	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,2,4-Trimethylbenzene	3.6	52	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,2-Dibromo-3-chloropropane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,2-Dibromoethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,2-Dichlorobenzene	1.1	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,2-Dichloroethane	0.02	3.1	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,2-Dichloropropane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,3,5-Trimethylbenzene	8.4	52	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,3-Dichlorobenzene	2.4	49	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,4-Dichlorobenzene	1.8	13	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
1,4-Dioxane	0.1	13	0.0550	U	0.0570	U	0.0530	U	0.0560	U	0.0570	U	0.0570	U	NT		NT		NT	
2-Butanone	0.12	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
2-Hexanone	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
4-Methyl-2-pentanone	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Acetone	0.05	100	0.00550	U	0.00570	U	0.00530	U	0.00560	U	0.00570	U	0.00570	U	NT		NT		NT	
Acrolein	~	~	0.00550	U	0.00570	U	0.00530	U	0.00560	U	0.00570	U	0.00570	U	NT		NT		NT	
Acrylonitrile	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Benzene	0.06	4.8	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Bromochloromethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Bromodichloromethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Bromoform	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Bromomethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Carbon disulfide	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Carbon tetrachloride	0.76	2.4	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Chlorobenzene	1.1	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Chloroethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Chloroform	0.37	49	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Chloromethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
cis-1,2-Dichloroethylene	0.25	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
cis-1,3-Dichloropropylene	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Cyclohexane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Dibromochloromethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Dibromomethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Dichlorodifluoromethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Ethyl Benzene	1	41	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Hexachlorobutadiene	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Isopropylbenzene	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Methyl acetate	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Methyl tert-butyl ether (MTBE)	0.93	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Methylcyclohexane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Methylene chloride	0.05	100	0.00550	U	0.00570	U	0.00530	U	0.00560	U	0.00570	U	0.00570	U	NT		NT		NT	
n-Butylbenzene	12	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
n-Propylbenzene	3.9	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
o-Xylene	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
p- & m- Xylenes	~	~	0.00550	U	0.00570	U	0.00530	U	0.00560	U	0.00570	U	0.00570	U	NT		NT		NT	
p-Isopropyltoluene	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
sec-Butylbenzene	11	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Styrene	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
tert-Butyl alcohol (TBA)	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
tert-Butylbenzene	5.9	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Tetrachloroethylene	1.3	19	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Toluene	0.7	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
trans-1,2- Dichloroethylene	0.19	100	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
trans-1,3-Dichloropropylene	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Trichloroethylene	0.47	21	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Trichlorofluoromethane	~	~	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Vinyl Chloride	0.02	0.9	0.00280	U	0.00280	U	0.00260	U	0.00280	U	0.00280	U	0.00290	U	NT		NT		NT	
Xylenes, Total	0.26	100	0.00830	U	0.00850	U	0.00790	U	0.00840	U	0.00850	U	0.00860	U	NT		NT		NT	
Semi-Volatile Organics, 8270 - Comprehensive (mg/kg)																				
1,1-Biphenyl	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
1,2,4,5-Tetrachlorobenzene	~	~	NT		NT		NT		NT		NT		NT		0.0906	U	0.0894	U	0.0909	U
1,2,4-Trichlorobenzene	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
1,2-Dichlorobenzene	1.1	100	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
1,2-Diphenylhydrazine (as Azobenzene)	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
1,3-Dichlorobenzene	2.4	49	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
1,4-Dichlorobenzene	1.8	13	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2,3,4,6-Tetrachlorophenol	~	~	NT		NT		NT		NT		NT		NT		0.0906	U	0.0894	U	0.0909	U
2,4,5-Trichlorophenol	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2,4,6-Trichlorophenol	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2,4-Dichlorophenol	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2,4-Dimethylphenol	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2,4-Dinitrophenol	~	~	NT		NT		NT		NT		NT		NT		0.0906	U	0.0894	U	0.0909	U
2,4-Dinitrotoluene	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2,6-Dinitrotoluene	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2-Chloronaphthalene	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2-Chlorophenol	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2-Methylnaphthalene	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2-Methylphenol	0.33	100	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
2-Nitroaniline	~	~	NT		NT		NT		NT		NT		NT		0.0906	U	0.0894	U	0.0909	U
2-Nitrophenol	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
3- & 4-Methylphenols	0.33	100	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
3,3-Dichlorobenzidine	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
3-Nitroaniline	~	~	NT		NT		NT		NT		NT		NT		0.0906	U	0.0894	U	0.0909	U
4,6-Dinitro-2-methylphenol	~	~	NT		NT		NT		NT		NT		NT		0.0906	U	0.0894	U	0.0909	U
4-Bromophenyl phenyl ether	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
4-Chloro-3-methylphenol	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
4-Chloroaniline	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
4-Chlorophenyl phenyl ether	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
4-Nitroaniline	~	~	NT		NT		NT		NT		NT		NT		0.0906	U	0.0894	U	0.0909	U
4-Nitrophenol	~	~	NT		NT		NT		NT		NT		NT		0.0906	U	0.0894	U	0.0909	U
Acenaphthene	20	100	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Acenaphthylene	100	100	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Acetophenone	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Aniline	~	~	NT		NT		NT		NT		NT		NT		0.181	U	0.179	U	0.182	U
Anthracene	100	100	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0589	JD
Atrazine	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Benzaldehyde	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Benzidine	~	~	NT		NT		NT		NT		NT		NT		0.181	U	0.179	U	0.182	U
Benzo(a)anthracene	1	1	NT		NT		NT		NT		NT		NT		0.0905	JD	0.186	D	0.325	D
Benzo(a)pyrene	1	1	NT		NT		NT		NT		NT		NT		0.0949	D	0.214	D	0.310	D
Benzo(b)fluoranthene	1	1	NT		NT		NT		NT		NT		NT		0.109	D	0.210	D	0.376	D
Benzo(g,h,i)perylene	100	100	NT		NT		NT		NT		NT		NT		0.0804	JD	0.163	D	0.227	D
Benzo(k)fluoranthene	0.8	3.9	NT		NT		NT		NT		NT		NT		0.0760	JD	0.161	D	0.281	D
Benzoic acid	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Benzyl alcohol	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Benzyl butyl phthalate	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Bis(2-chloroethoxy)methane	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Bis(2-chloroethyl)ether	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Bis(2-chloroisopropyl)ether	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Bis(2-ethylhexyl)phthalate	~	~	NT		NT		NT		NT		NT		NT		0.131	D	0.0448	U	0.0456	U
Caprolactam	~	~	NT		NT		NT		NT		NT		NT		0.0906	U	0.0894	U	0.0909	U
Carbazole	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0480	JD
Chrysene	1	3.9	NT		NT		NT		NT		NT		NT		0.0978	D	0.180	D	0.375	D

4 Tripp Lane
Armonk, New York

Summary Laboratory Analytical Results for Soil

Sample ID York ID Sampling Date Client Matrix	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential	S-1 22H0961-01 8/4/2022 Soil		S-2 22H0961-02 8/4/2022 Soil		S-3 22H0961-03 8/4/2022 Soil		S-4 22H0961-04 8/4/2022 Soil		S-5 22H0961-05 8/4/2022 Soil		S-6 22H0961-06 8/4/2022 Soil		Comp-1, C-1 22H0961-07 8/4/2022 Soil		Comp-2, C-2 22H0961-08 8/4/2022 Soil		Comp-3, C-3 22H0961-09 8/4/2022 Soil	
Compound			Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Dibenzo(a,h)anthracene	0.33	0.33	NT		NT		NT		NT		NT		NT		0.0454	U	0.0522	JD	0.0836	JD
Dibenzofuran	7	59	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Diethyl phthalate	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Dimethyl phthalate	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Di-n-butyl phthalate	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Di-n-octyl phthalate	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Fluoranthene	100	100	NT		NT		NT		NT		NT		NT		0.151	D	0.288	D	0.651	D
Fluorene	30	100	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Hexachlorobenzene	0.33	1.2	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Hexachlorobutadiene	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Hexachlorocyclopentadiene	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Hexachloroethane	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Indeno(1,2,3-cd)pyrene	0.5	0.5	NT		NT		NT		NT		NT		NT		0.0746	JD	0.138	D	0.201	D
Isophorone	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Naphthalene	12	100	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Nitrobenzene	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
N-Nitrosodimethylamine	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
N-nitroso-di-n-propylamine	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
N-Nitrosodiphenylamine	~	~	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Pentachlorophenol	0.8	6.7	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Phenanthrene	100	100	NT		NT		NT		NT		NT		NT		0.0507	JD	0.0922	D	0.302	D
Phenol	0.33	100	NT		NT		NT		NT		NT		NT		0.0454	U	0.0448	U	0.0456	U
Pyrene	100	100	NT		NT		NT		NT		NT		NT		0.122	D	0.255	D	0.515	D
Pesticides, 8081 target list (mg/kg)																				
4,4'-DDD	0.0033	13	NT		NT		NT		NT		NT		NT		0.00225	D	0.00179	U	0.00180	U
4,4'-DDE	0.0033	8.9	NT		NT		NT		NT		NT		NT		**0.00887**	D	**0.0114**	D	0.00191	D
4,4'-DDT	0.0033	7.9	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Aldrin	0.005	0.097	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
alpha-BHC	0.02	0.48	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
alpha-Chlordane	0.094	4.2	NT		NT		NT		NT		NT		NT		0.0492	D	0.0112	D	0.0128	D
beta-BHC	0.036	0.36	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
delta-BHC	0.04	100	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Dieldrin	0.005	0.2	NT		NT		NT		NT		NT		NT		**0.00512**	D	0.00223	D	0.00255	D
Endosulfan I	2.4	24	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Endosulfan II	2.4	24	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Endosulfan sulfate	2.4	24	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Endrin	0.014	11	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Endrin aldehyde	~	~	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Endrin ketone	~	~	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
gamma-BHC (Lindane)	0.1	1.3	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
gamma-Chlordane	~	~	NT		NT		NT		NT		NT		NT		0.0428	D	0.00928	D	0.00920	DP
Heptachlor	0.042	2.1	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Heptachlor epoxide	~	~	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Methoxychlor	~	~	NT		NT		NT		NT		NT		NT		0.00179	U	0.00179	U	0.00180	U
Toxaphene	~	~	NT		NT		NT		NT		NT		NT		0.179	U	0.179	U	0.180	U
Metals, Target Analyte (mg/kg)																				
Aluminum	~	~	NT		NT		NT		NT		NT		NT		16,100		14,000		14,900	
Antimony	~	~	NT		NT		NT		NT		NT		NT		3	U	2.910	U	2.870	U
Arsenic	13	16	NT		NT		NT		NT		NT		NT		5.320		3.370		2.770	
Barium	350	400	NT		NT		NT		NT		NT		NT		117		104		104	
Beryllium	7.2	72	NT		NT		NT		NT		NT		NT		0.0600	U	0.0580	U	0.0570	U
Cadmium	2.5	4.3	NT		NT		NT		NT		NT		NT		0.485		0.349	U	0.963	
Calcium	~	~	NT		NT		NT		NT		NT		NT		17,700	B	9,760	B	8,630	B
Chromium	~	~	NT		NT		NT		NT		NT		NT		30		24		26.800	
Cobalt	~	~	NT		NT		NT		NT		NT		NT		11.300		10.300		11.200	
Copper	50	270	NT		NT		NT		NT		NT		NT		**59.100**		30.200		32.300	
Iron	~	~	NT		NT		NT		NT		NT		NT		21,600		17.800		19.900	
Lead	63	400	NT		NT		NT		NT		NT		NT		**92.600**		54.500		62.900	
Magnesium	~	~	NT		NT		NT		NT		NT		NT		11,600		7,390		6,660	
Manganese	1600	2000	NT		NT		NT		NT		NT		NT		421		321		373	
Nickel	30	310	NT		NT		NT		NT		NT		NT		17.900		13.300		12.300	
Potassium	~	~	NT		NT		NT		NT		NT		NT		2,790	B	2,310	B	1,420	B
Selenium	3.9	180	NT		NT		NT		NT		NT		NT		3	U	2.910	U	2.870	U
Silver	2	180	NT		NT		NT		NT		NT		NT		0.599	U	0.582	U	0.573	U
Sodium	~	~	NT		NT		NT		NT		NT		NT		59.900	U	58.200	U	57.300	U
Thallium	~	~	NT		NT		NT		NT		NT		NT		3	U	2.910	U	2.870	U
Vanadium	~	~	NT		NT		NT		NT		NT		NT		39.500		34.500		38.900	
Zinc	109	10000	NT		NT		NT		NT		NT		NT		103		76.200		90.700	
Mercury by 7473 (mg/kg)																				
Mercury	0.18	0.81	NT		NT		NT		NT		NT		NT		0.139		0.109		0.115	
Total Solids (%)																				
% Solids	~	~	90.400		88.300		94.400		89.300		87.800		87.300		89.400		92.100		90.200	
Polychlorinated Biphenyls (PCB) (mg/kg)																				
Aroclor 1016	~	~	NT		NT		NT		NT		NT		NT		0.0181	U	0.0180	U	0.0182	U
Aroclor 1221	~	~	NT		NT		NT		NT		NT		NT		0.0181	U	0.0180	U	0.0182	U
Aroclor 1232	~	~	NT		NT		NT		NT		NT		NT		0.0181	U	0.0180	U	0.0182	U
Aroclor 1242	~	~	NT		NT		NT		NT		NT		NT		0.0181	U	0.0180	U	0.0182	U
Aroclor 1248	~	~	NT		NT		NT		NT		NT		NT		0.0181	U	0.0180	U	0.0182	U
Aroclor 1254	~	~	NT		NT		NT		NT		NT		NT		0.0181	U	0.0180	U	0.0182	U
Aroclor 1260	~	~	NT		NT		NT		NT		NT		NT		0.0181	U	0.0180	U	0.0182	U
Total PCBs	0.1	1	NT		NT		NT		NT		NT		NT		0.0181	U	0.0180	U	0.0182	U

NOTES:
Any Regulatory Exceedences are color coded by Regulation

Q is the Qualifier Column with definitions as follows:
D=result is from an analysis that required a dilution
J=analyte detected at or above the MDL (method detection limit) but below the RL (Reporting Limit) - data is estimated
U=analyte not detected at or above the level indicated
B=analyte found in the analysis batch blank
E=result is estimated and cannot be accurately reported due to levels encountered or interferences
P=this flag is used for pesticide and PCB (Aroclor) target compounds when there is a % difference for detected concentrations that exceed method dictated limits between the two GC columns used for analysis
NT=this indicates the analyte was not a target for this sample
~=this indicates that no regulatory limit has been established for this analyte